THE HOUSEKEEPER'S REFERENCE BOOK AND DOMESTIC COUNSELOR

COMPILED AND EDITED BY ADELINE O. GOESSLING

PHELPS PUBLISHING COMPANY

THE VALUE OF WATER

"Traverse the desert, and then ye can tell
What treasures exist in the cold, deep well;
Sink in despair on the red, parch'd earth,
And then ye may reckon what water is worth."

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Till by experience taught the mind shall learn
That, not to know at large of things remote
From use, obscure and subtle, but to know
That which before us lies in daily life,
Is the prime wisdom.

—[John Milton.

"Books must follow sciences, and not sciences books."

"All that mankind has done, thought, gained or been, is lying in magic preservation in the pages of books."

One thing, however, I must premise, that without the assistance of natural capacity, rules and precepts are of no efficacy.—[Quintilian.

Some books are friends; some mere passing acquaintances; pleasing for a brief season, but with absence unlamented. The friend book is taken to the heart and cherished as a precious possession. It is an aid in time of need, a counsellor in time of perplexity; a loyal ally at all seasons; no more to be dispensed with than our living comrades and companions.

INTRODUCTION

THIS book is designed to help the intelligent housekeeper of limited means who looks upon the domestic field as one worthy of her best efforts, and who fully realizes that the business of keeping house is the most important as well as the most complicated business in the world. Between the covers of this book she will find an extensive and eminently practical fund of household information upon which she can draw, almost without limit, to meet the various housekeeping problems that inevitably present themselves from year to year. The table of contents is a convincing argument as to the value of this work. The compiler has taken much pleasure in preparing it, and bespeaks for it a kindly welcome and hearty appreciation in thousands and thousands of American homes. Thanks are herewith tendered to all who by their practical contributions helped to make this "Housekeeper's Reference Book" a success and a worthy companion book to "The Farm and Home Cook Book," which has found a useful place in numberless homes in every state of the Union.

Learn to live, and live to learn,
Ignorance like a fire doth burn,
Little tasks make large return.
—[Bayard Taylor.

Who does the best his circumstance allows,
Does well, acts nobly; angels could do no more.
—[Young.

Household Hygiene and Sanitation

The Preservation and Promotion of Health

EVERYONE desires that greatest of all blessings—good health. Given their birthright at the start, all may continue to enjoy it through life, by carefully observing the laws of hygiene and sanitation. Intelligent people no longer ascribe sickness to "Providence," but rather to the sin of ignorance. The discoveries of science have shown that many of the fatal diseases of mankind are preventable. Where men congregate more or less in numbers the dangers that menace health are proportionately increased, owing to sanitary transgressions, which are frequently the result of neglect or ignorance. It is, therefore, necessary that each individual inform himself and that all co-operate for the common good. In cities and large towns sanitary affairs are largely controlled by public boards of health, and violations of the laws subject the individual to punishment, but in isolated country districts it is necessary for each householder to look after such matters himself, if he would enjoy good health. Neglect brings its own punishment, sooner or later, in one way or another. The laws of hygiene are simple enough, as the following directions will show:

Air

Air, fresh, pure air and plenty of it, is absolutely necessary to good health. Everyone should try at all times to secure and enjoy a maximum of the precious life-sustaining element, and yet many ignorantly and unnecessarily deprive themselves of as much of it as they can manage to exist without, thereby rendering themselves less able to resist insidious attacks of disease. When even that dread scourge, that fearful "white man's plague," consumption, if taken in time, can be cured by making the patient live in the fresh air all the time, it would seem that the most ignorant and stubborn ought to be convinced that only in fresh air can one seek health and only in fresh air can health and vigor be maintained. As air is the material most needed by our bodies, we should always have an abundance at hand, and be sure it is of the very best quality. Many of our hours are spent indoors, and this teaches us the important lesson of airing our homes. It should also be remembered that fresh air is easier to warm than stale air.

Sunlight

Sunlight is one of the most powerful germicides known. It destroys germs and spores, and if we could carry sunlight into every corner of our houses, there would never be any need for disinfectants. The germs of all diseases are killed by direct sunlight, in six to eight hours. Thus, the important lesson is taught us that well-lighted rooms do not harbor contagion. Good ventilation (fresh air) and sunlight are the most important aids to good health. Ideally every house should have an entire daily bath of sun-dried air—that is, air that has been sterilized by the sun's rays. Not only should there be a free circulation of sun-dried air, but there should be no near conditions which might render the air impure, such as stagnant water, decaying vegetation or animal matter, or any noxious refuse. Dampness, darkness and dirt are enemies of good health.

To Test the Purity of Atmosphere

A simple method of ascertaining the presence of impurity (carbonic acid) in the atmosphere is to nearly fill a glass tumbler with lime water and to place it on a shelf or mantelpiece in a room. The rapidity with which a film or thin skin will form on the surface of this lime water, or the water becomes cloudy, corresponds to the amount of carbonate acid present in the atmosphere. Another test is a little moist carbonate of lead put on a plate or saucer and exposed in the

same way. Should any sulphurated hydrogen be contained in the air, this will turn black. This is a positive test for that destructive gas.

Sulphur as a Disinfectant

To disinfect a house is a very simple matter. A few pounds of sulphur burned in each room is a safe and sure disinfectant. Take a large iron kettle, put 4 inches sand in the bottom, set the kettle on four bricks, put in the kettle a shovel of live coals, throw on 3 or 4 lb of powdered sulphur, shut up the room tight, and let it remain for 24 hours, then open and air for 48 hours, and the room will be ready for use. This will not only kill all the germs of disease, but also those pests more annoying than dangerous—moths, roaches and bed bugs.

Ventilating Arrangements

A very simple arrangement by which the air of an apartment can be kept pure, without danger of drafts, is to have fitted into two windows, on opposite sides of the room, a piece of wood 2 inches thick and the exact width of the window. Raise the window and let it rest on this strip. A current of air will continually pass in between the sashes. When ventilating rooms, open the windows at top and bottom. The fresh air will rush in one way and the foul air will make its exit the other.

Cover a screen of desired size with cheesecloth and insert in windows, the same as mosquito or fly screens. By this method rooms can be ventilated without creating drafts and allowing snow to blow in. Especially good for bedrooms. Keep them in all winter. Never close all the windows tight.

To Fumigate a Room

Where there has been sickness, and especially any contagious disease, fumigation is absolutely necessary. The best preparation for this purpose is formaldehyde, burning which produces a gas (formaline), in which no germ can live. One large formaldehyde candle (it may be had at almost any drug store for 50 cents) will fumigate an ordinary sized room. Open wardrobe doors, bureau drawers, etc, and throw the bedding loosely around. Then secure all openings, so the gas cannot escape. Cut strips of newspaper about 2 inches wide, dip into hot water, and stick on the edges and cracks of the windows. The heat makes the paper stick, and it does not disfigure the varnish in the least, peeling off perfectly after it dries. Stuff newspapers up the chimney of the open fireplace or grate, or if there is a stove, up the pipes. Then light the candle accord-

ing to directions on the box, and leave the room. As quickly as possible paste up the keyhole from the outside, and the cracks of the door. After 4 hours the room may be aired, but it is best to let it remain closed 12 hours. This gas does not tarnish metals or change the color of clothing, and an airing will remove the slight odor.—[C. C., N C.

Deodorizers and Disinfectants

Do not confuse the one with the other. Deodorizers are what the name implies, and do not disinfect. On the other hand, disinfectants are sometimes also deodorizers, but more often are almost or wholly odorless. Antiseptics simply destroy bacteria, which cause decomposition. Among the disinfectants may be mentioned burning sulphur, burning formaldehyde, carbolic acid, full strength, fresh chloride of lime, chloride of zinc, sulphur dioxide, spirits of thymol, and various patented articles specially put up for disinfecting purposes. Spirits of thymol, chloride of lime and carbolic acid are also deodorizers. Good deodorizers for sickrooms are lemon or orange peel warmed on a stove lid, vinegar boiled with tincture of myhrr, some ground coffee and camphor gum burned together, or a flannel rag saturated in spirits of camphor and then burned. But if everything is as it should be, there will seldom be any use for deodorizers. Fresh air is the best of all.

Water

Chemists estimate that at least two-thirds of the human body is water. As the body is continually giving out water through the skin, lungs and kidneys, it must frequently receive a new supply to keep up the normal proportion. It is of prime importance that the water we drink contain nothing harmful to the body. To have water is a necessity; to have it harmless is of equal importance. Therefore, a pure, generous and convenient supply of water should not be considered a luxury, possible only to a few, but a necessity obtainable by all, even at the cost, if need be, of some other less important furnishing. It is stated by experts that neither looks, taste nor clearness can be trusted to distinguish between a safe or an unsafe water. Analysis alone can establish that. One thing on which all are agreed is that drinking water polluted by waste material should be avoided. The danger most to be feared from drinking such water is typhoid fever. When there is any reason to suspect that the drinking supply is polluted, it should be boiled 20 minutes after the steam begins to rise. This will kill all germs. Another caution:

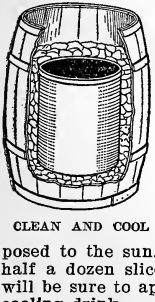
water very readily takes up gases or bacteria that may be in the air, and for this reason should not be left long uncovered when it is used for drinking. Such care is especially necessary in the sickroom.

Cheap Water Filters

Take a common garden flower pot of large size and stop the drainage hole with a piece of clean sponge, which should not, however, be wedged in too tightly. Place a layer of 2 inches of medium fine charcoal in the pot, then a layer of clean sand, and then a 3-inch layer of clean, coarse gravel. Suspend this filtering pot over an earthen jar; pour the water in the filtering pot, and allow it to drip into the jar. Another method is to bore a hole in the bottom of a new, clean, unpainted wooden pail. Prepare a slatted wooden bottom for this pail, and over it put a piece of clean white flannel to entirely cover the bottom of the pail. Then put in some coarsely powdered charcoal, some coarse, clean river sand, and some sandstone, broken into small pieces. The pail should rest upon a little skeleton platform, and a large jar be placed beneath it to catch the filtered water.

A Homemade Water Cooler

It's a mighty nice thing to have a good supply of cold water at hand at the barn or out in the field, when threshers, corn huskers or hay harvesters are at work. Water in an open pail soon becomes stale and unpalatable. Here is a very simple and effective arrangement. Put a 10-gal stone jar inside a flour barrel and surround the jar with charcoal, sawdust, sand, pebbles, hay, or chaff, if nothing else happens to be available. Cover the jar with a tight lid and spread over it a thick, wet cloth, and then cover the whole barrel top with another cloth. By this arrangement the water will keep nearly ice cold in the jar, even though the barrel were standing in an open field, fully exposed to the sun. If you will add a package of oatmeal and half a dozen sliced lemons to the water in the jar, the men will be sure to appreciate it. This makes a very healthful and cooling drink.

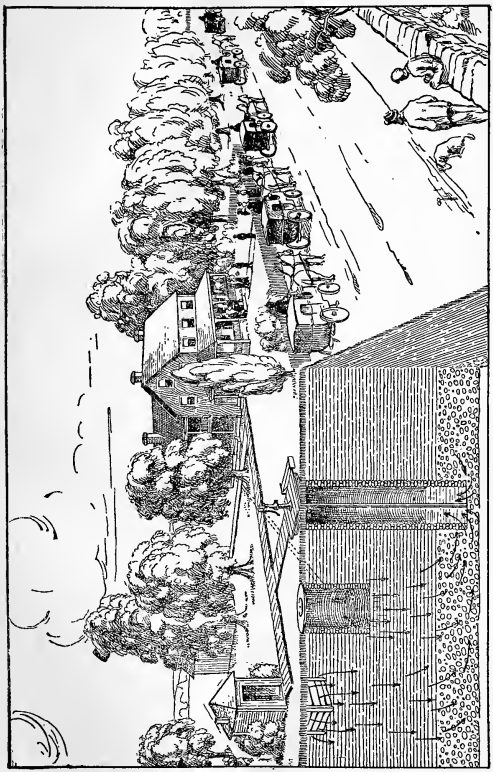


CLEAN AND COOL

Wells, Cisterns and Tanks

The ordinary well is a hole dug in the ground until water-bearing layers are reached, and then scooped out to furnish

I—A VIVID PICTURE OF CAUSE



II—A SAD PICTURE OF EFFECT

sufficient depth for the collection and storage of water. Very often the sides of the well are simply laid with rough stones to prevent the dirt from caving in. It should be remembered that the shallower the well, the more liable it is to pollution, and also that the householder should very carefully locate his well with reference to drainage and sewage.

It is often thought that a well placed higher than any known source of pollution is safe. This is a mistake. The outlet must be considered as well as the possible place of entrance. Infection from the surface is another danger. When a well drawn by a pump is covered with boards so loose as to allow cracks through which waste water may wash, carrying with it more or less dirt of all kinds—insects, leaves, and filth carried on boots—the water is sure to become polluted. The well, to be safe, must be thoroughly protected from all pollution from the top, as well as from the sides and bottom.

Do not put too much faith in "ground filtration." Place earth closets, cesspools, manure heaps and all other waste material far enough away from well or cistern to make them absolutely safe from pollution. Just how far a well may be from a source of infection and still be safe cannot be told in figures, for it depends upon the direction of the flow of the underground water, its force, and the position of rock, or condition of soil. Deep driven or bored wells are usually safe from surface pollution, but the same precautions about sewage contamination should be observed.

Ground cisterns used for rain water supply should be in two parts—the water received in one part, which is provided with filtration material (sand, pebble, charcoal), so it can filter at the bottom and then pass into the next part, with which the pump connects. The cisterns should be made of cement and provided with an overflow pipe discharging into the open air. They should be so constructed that they may be easily inspected and cleaned occasionally. Charcoal and borax may be thrown into rain water cisterns now and again. Both act as partial purifying agents.

Where the water is drawn up from wells by some force and then stored in house tanks, the latter are often placed in dark, inaccessible positions, and are therefore seldom, if ever, looked at. This is wrong. The housewife should see to it that the tank is well covered and in a sanitary position, and also inspect and clean it occasionally when necessary. All stored water contains or collects organic matter and dust. These form slime over the sides and bottom of the tank—hence the necessity for sometimes emptying and cleaning them.

With a safe water supply, the housewife has next to make sure that the conveying pipes do not injure it. Some waters

dissolve lead and zinc, and others are particularly hard on iron. When the drinking and cooking supply of water is kept in pails, these should always be covered, since water readily absorbs gases and other impurities from the air.

A Filter for Cistern Water

Where cistern water is used for drinking or cooking, it should by all means be filtered. Much dirt in the way of soot, leaves, dead insects, droppings from birds and pollen from trees is washed into the cistern unless some means are taken to prevent it. The simplest arrangement is to have a movable

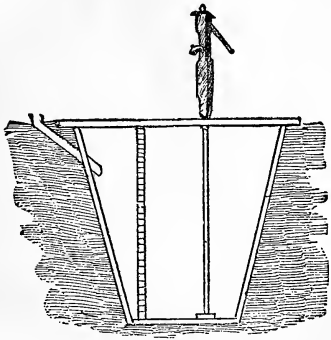


FIG I—SOFT BRICK FILTER

section in the leader which can be turned to let the rain wash the dirt onto the ground. Then after the roof is cleaned, the balance of the rain can go into the cistern. This is objectionable in that it needs to be looked after during every rain and frequently all the water will be lost.

The simplest form of filter is to build a partition through the cistern, laying up a soft brick wall in cement, as shown in Fig 1. This will ordinarily give good satisfaction if the impurities which collect on the receiving side of the wall are removed occasionally. Another and better form of filter is shown in Fig 2. In this case the cut is supposed to represent a 100-bbl cistern and a filter of 25 bbls capacity. They are built of either concrete or brick well cemented on the inside.

The filter is flat-bottomed and is half filled with charcoal, sand and gravel in layers, the charcoal being placed in the bottom. The leader which comes from the roof should enter the filter on only a slight angle, less, in fact, than shown in the cut, in order to prevent rolling the filtering material. The material in the filter will need to be removed occasionally and replaced with fresh charcoal, sand and gravel.—[F & H.

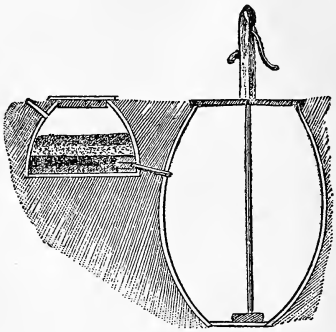


FIG II—BEST FORM OF FILTER

A Ventilated Platform

I have discovered a way to keep the well clean and pure at all times. I make the frame of the platform of 2x4's, allowing a space 2 to 6 inches between the top and bottom parts of the sides. This space is covered on the inside with a fly screen to keep out dirt and insects, and outside of this with a larger meshed screen to keep out large vermin. This gives good ventilation to the well, which never becomes foul. In the winter I cover the platform with straw and snow.—[J. H., Minnesota. [See illustration on next page.]

To Detect Hard Water

To ascertain whether or not water is fit for domestic purposes, add a few drops of soap and alcohol solution to a glassful of water. If the water be pure, it will continue limpid; if hard, white flakes will be formed.

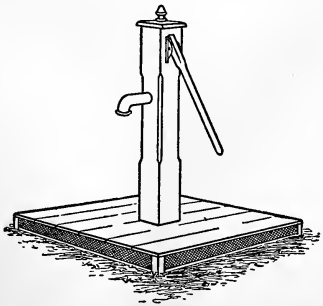
To Illuminate a Well

By the use of a mirror to throw a reflection of the sun's rays down a deep well, the bottom is clearly seen, and a lost bucket or any other object may be easily located. If one mirror will not do the work, take two mirrors, one to receive the direct rays of the sun, and the other to reflect the rays from a mirror.

Cesspools, Closets and Drains

There is a question of equal importance with that of water supply, namely, disposing of the polluted liquid after you have used it. After you have used this water, you have produced one of the most foul and baneful poisons in existence. In cities the common method is to conduct the fluid wastes into the city sewers, but it is rare that sewers are available at the farmhouse for the disposing of these poisonous wastes. The farmer is compelled to make such disposition of the house wastes as may best suit his convenience, but the manner is more than likely to be one that would not in many instances pass the inspection of sanitary health officials. In past years, in pioneer times, and still in some unprogressive localities the usual mode of disposing of dish water, house wastes and the like is to carry them to the rear stoop and fling them out upon the surface of the soil, only to make a feasting ground for flies.

Outdoor closets are generally built in the most questionable manner. They are anything but comfortable, either because



THIS INSURES PURE WATER ALWAYS

of the cold in winter or of disgusting odors in summer, to say nothing of the dangers consequent upon concentrating any befoulment, permitting it to ferment and fester without any attempt to deodorize or disinfect, or to protect it from flies. The numerous summer complaints, fevers and the like are directly traceable to unsanitary conditions somewhere. Such diseases as typhoid fever, smallpox, malaria, diphtheria, scarlet fever and the like have their origin in filth.

In the country people ordinarily dig an open well, sometimes a shallow, bored or driven well, and draw its contents up by means of a bucket, suction pump or force pump. The well is often improperly covered. Perhaps a short distance away he digs another hole, and into this deposits the wastes of living. During the rainy seasons the ground becomes saturated, and this vile cesspool becomes waterlogged and filled. These poisoned fluids find means of escape through worm holes, crawfish holes, crevices in the ground or through gravelly veins, and without difficulty reach the water supply.

It is a mistake to suppose that the passing of these cesspool impurities through crevices or openings or gravel veins produces purification, for it usually does not. To secure purification of deadly organic wastes there must be a certain amount of bacterial growth in the sewage, and when sewage is prevented from coming in contact with the air and is kept in some subterranean channel or crevice, where the temperature is low and when there is no air, little purifying bacterial action takes place. Thus poisonous substances may travel in sewage great distances in these underground channels or veins without having become purified in the slightest degree. Water may be clarified and look as pure as crystal and yet be as deadly as poison.

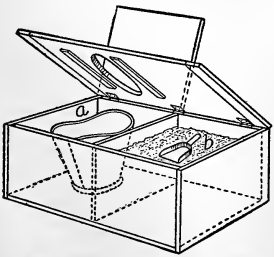
It will be seen that man is his own worst enemy, for the wastes of his body are the most dangerous to his life. The impure air which he breathes out, the excretions of the skin and its dead particles, the solid and liquid excreta or the wastes of the digestive processes, are the portions to which great attention must be given, if he is to have a healthy life. Primitive man, like the animals, trusted to earth to render these wastes of digestion harmless. Wherever there are no public sewers, the earth is still available in different ways for the harmless disposal of these wastes. The ordinary privy is a menace to health as well as an odorous disgrace. The excreta in it are exposed to flies, which afterward may carry filth and germs of putrefaction to food or to the body. Its watery pools become breeding places for mosquitoes, and the washings from its putrefying mass may infect the well or other source of drinking water. Therefore, such privies should be abolished.

To make a less offensive earth closet, dig a hole far enough

away from dwelling and source of water supply to insure safety from pollution for the latter, and disagreeable proximity for the former. This hole should be at least 6 ft deep, and may be of any dimension desired—3x6 ft being generally considered sufficient. Into this hole put about 2 ft of sawdust, to absorb the liquids. The shelter can then be placed over the hole, and on a shelf or in some handy place there should always be found a covered box of fresh stone lime or quicklime, and a shovel. Every time the closet is used, a shovelful of the lime should be thrown into the closet, and every evening a pint of the following disinfectant solution should be poured in. Dissolve 10 lbs of copperas in a 5-gallon pail of water, then add ½ pt of clear carbolic acid. Put in pint bottles and empty one bottleful in the closet every night. The expense and time it takes to do this should not be considered, since it is an economic health protective measure. Care should be taken to keep the disinfectant out of the reach of children, and to plainly label the bottles "Poison." Before this earth closet becomes filled with excreta, a new hole should be dug and the closet shelter removed to this, while the old hole should receive a generous application of quicklime and then be covered with several feet of sand or dry loam. All this may sound rather troublesome, but is nothing compared to the price of neglect. It is simply self-protection. Any house in the country may be provided with a sanitary method for the disposal of human waste, if health and comfort are prized beyond a little trouble and small expense.

An Indoor Convenience

An indoor earth closet for the use of children or invalids, during the night, or specially inclement weather, is shown in the accompanying cut. The compartment *a*, which holds the pail, and also the cover, should be frequently washed with a disinfectant, and painted. Some dry loam or sawdust should be placed in the bottom of the pail. In compartment *b*, some dry loam mixed with fine, sifted coal ashes or lime should be kept, and also a scoop shovel. A shovelful or more of this dry mixture should be thrown over every deposit in the pail, and the contents of



FOR INVALIDS OR CHILDREN

the latter buried at the first opportunity, or, when the ground is frozen, burned with plenty of quicklime.

About Plumbing

Be absolutely sure the plumbing is in good order. Better spend money on the plumbing than give it to the doctor, druggist or undertaker. No amount of deodorizers or disinfectants will overcome the results of bad plumbing, which renew themselves constantly until the cause is removed. Train your nose to detect bad odors, and then heed the warning. If not sure about the plumbing, have a plumber apply the "oil of peppermint test."

The Cellar

The cellar may be considered as a reservoir of air for the whole house. There is little use in adopting special methods of ventilation for the living rooms and sleeping rooms, if foul air is allowed to rise constantly from the cellar. More than half of the cellar air finds its way into the rooms above. If you have any doubts about that, try this experiment: Purchase at the drug store 1 oz of oil of peppermint and sprinkle it around in your cellar. Note how the odor will penetrate to every room above. Foul air will do the same. Though its odor may not be quite so strong, it is extremely unhealthful, nevertheless.

One of the most dangerous qualities of the unhealthful house is that it does not always and at once produce a definite disease, though such is often its result; but it slowly and insidiously causes ill health and general weakness, to which women, from their greater confinement to the house, are especially subject. In fact, the whole family is made to suffer, if the cellar is not as it should be—sanitary—while the patent medicine man, the druggist and the doctor—and, alas, even the undertaker—fatten on the fruits of neglect, or ignorance of the simplest laws of sanitation.

It is best not to store fruits and vegetables in the cellar, but if this must be done, then the greatest care must be used to keep them dry and to sort them often, so that the decayed and decaying parts may be removed.

The cellar should at all times be well aired. To accomplish this, one or more of the cellar windows should be open day and night, all the year, wire screened in summer, and muslin screened in winter. Never close the windows and bank up the cellar foundation with straw, leaves or manure. Such a practice is inexcusable, in the light of present-day knowledge about sanitary affairs, which he who reads may share.

The sanitary cellar is practically possible. The cellar should be as light and dry and clean as any room in the house. The walls should be free from dust and cobwebs, and receive a coat of whitewash at least once a year, preferably twice a year. The ventilation should be perfect. Such a cellar is not only a satisfaction to the housekeeper, but it has much to do with the well-being of the family. The time and money spent in converting the unhealthful cellar into a safe place is time and money well spent, which will pay interest in better health and less work in succeeding years.

It should be remembered, however, that even after making the cellar or whole house sanitary, it must be kept so. Cleanness and pure air will usually make it safe, but it takes eternal vigilance to keep things clean, and to keep the fresh air moving through.

Disinfecting Washes

See the chapter on whitewashes for all sorts of recipes and directions to aid in keeping cellars, rooms and pantries clean and healthful. Get into the habit of using preventive measures, rather than cures for ills that can be avoided.

Some Simple Sanitary Helps

Use fresh stone lime finely powdered, or quicklime, to absorb moisture and putrid fluids. If in the cellar or out of doors sprinkle it on the place to be dried, but in damp rooms place a number of plates containing some of the lime powder. Whitewash infected places with pure lime, instead of kalsomine.

Charcoal powder will absorb putrid gases. The charcoal should be dry and fresh, and is more efficacious when combined with lime. This forms a compound similar to the "calyx" powder sold in shops. Charcoal can be freshened by baking in the oven.

Chloride of lime gives off a chlorine which will absorb putrid effluvia and stop putrification. It is generally used the same way lime is used, but if the chlorine gas is wanted in cellars, or closed rooms, pour some strong vinegar or diluted sulphuric acid upon the plates containing chloride of lime and occasionally renew.

Sulphate of iron (copperas) and carbolic acid are used to disinfect waterclosets and drains. Dissolve 8 or 10 lb copperas in a pail of water and pour 1 pt of this solution into the closets or drain every night and morning. To make it still more effective add carbolic acid to the iron solution—½ pt of the acid to 5 gals of the solution.

Carbolic acid (fluid) may be diluted at the rate of from 50 to 100 parts of water to 1 part of fluid acid. This solution may be used for the same purpose as copperas is used, also to sprinkle upon any kind of garbage or decaying matter, and on foul surfaces or in drains. When used to disinfect clothing, carbolic acid of good quality should be thoroughly mixed with its own quantity of strong vinegar, and next be dissolved in 200 times its own quantity of water before the clothing is immersed in it. This mixture with vinegar insures such complete solution of the carbolic acid that the clothing will not be burned by the acid. The disinfecting and antiseptic power of good carbolic acid is so great that 1 part of it to 50 or 100 parts of water is sufficient for ordinary purposes.

For drains, sewers, foul heaps, stables and earth closets the cheap "dead oil" of coal tar, or the crude carbolic acid, answers every purpose, when freely and persistently applied. Coal tar is also available as a disinfectant to paint upon the walls of stables, privy vaults and drains. By mixing with dry lime coal tar may also be used on foul grounds or heaps of refuse.

Borax alone, or dissolved in water, used freely to pour down sinks, etc, removes all noisome smells, acting as a purifier. It will sometimes even render impure water wholesome. It should be used freely where sewer or other unwholesome gases are suspected. A strong solution of common sal soda, or washing soda, with hot water, is also good to keep sink drains clean. It should be poured down hot no less than once a week.

Permanganate of potash is another most convenient and useful disinfectant. It is cheap, and a small bottle of crystals should always be kept in the house. For general purposes, 1 teasp of the crystals dissolved in 1 gal water is the best strength.—[F & H.

If a small jar or box filled with lime be kept uncovered in a pantry or cellar, the air will be dry and pure.—[B. E., Ore.

When cistern water has become unfit for use take 1 lb pulverized alum, dissolve it in 1 qt water, and after pouring it into the cistern stir thoroughly with a long pole. This should be done toward evening. The next morning add 1 lb borax and stir again. Allow from 10 to 15 hours to settle. This will render the water perfectly clear and pure.

One of the most delicate ways of perfuming a room is to fill a dish with boiling water, and then pour in ½ teasp oil of lavender.

To clear blackened or oily water, add 2 oz each of powdered alum and borax to each 20 barrels of water. The sediment will settle in a few hours and the water be clear and fit to use for washing.—[W. N., Texas.

Housekeeping and Housecleaning

SYSTEM is good, but too much system is as bad as too little. Whatever you do, don't spoil the peace and comfort of the entire household by upsetting the whole place in a grand effort to have "cleaning over and done with" in some certain period of time. Don't take the stoves down the first warm spell in March or April. Let the stoves alone a while and begin cleaning up garret, working gradually downward to the cellar. Wear comfortable clothing, for you have to lift, climb, reach and stoop, and you need garments which give free play to all the muscles. Plan meals with a view to saving time and strength. Give the family plenty of nourishing and appetizing food, but when you begin real hard housecleaning, have on hand a liberal supply of food, which can be used cold or warmed over for one or two meals. Every day, take an hour off to rest. This is not a waste of time. It is an economy. You will resume work refreshed by the short rest and be able to plan and perform much better than if you had toiled steadily onward.

The Garret

The garret should never be the privileged place of disorder, the one spot where all rubbish is consigned, where chaos reigns supreme, and the accumulated rubbish of years is stored to mold, rust, draw moths, and attract dust, dirt and disease. Keep the garret windows open all summer, but screen them. Always have a current of air passing through, unless, perhaps,

in time of heavy storms. Don't forget to sweep it. No house can be absolutely clean that keeps a reservoir of dust at the top. It will sift down, despite closed doors.

Don't keep so many useless things. Get rid of all that you can, and sort the rest systematically. Put white rags in one bag, the colored in another, silks and velvets in a box, etc, and label all bags and boxes plainly. Put all boxes on shelves and underneath them hang the bags and any cotton garments not needed. Do not hang up woolen garments at all. They are simply breeding places for moths. Air and brush them and pack in a carefully aired and cleaned trunk or box, with newspapers between, above and below them, and a sprinkling of camphor or moth balls between each layer. The floor should be washed well with a solution of carbolic water.

The Cellar

Remove all removable things, sweep every nook and cranny, including ceiling, clear out all cobwebs, open bins and closets and set doors and windows wide open. In every bin, or inclosed place, put a dish with several lumps of quicklime in it. Sprinkle a little copperas over it, let it slake, but add no water. This takes away bad odors. Scatter fresh, dry borax all around, in corners and along the walls. Wherever it will not be in the way, hang a piece of netting with some fresh charcoal lumps tied inside. Charcoal has a marvelous power to absorb bad smells. Apply a good coat of cellar whitewash (see whitewash recipes) to all walls, wash and paint shelves, and then have a free, unobstructed current of fresh air allowed free access, since an unhealthful, close, dark cellar usually means an ailing family above it.

Stoves and Chimneys

Clean stoves thoroughly, inside and out, and rub well with kerosene or linseed oil those that are to be set away for the summer. This will prevent rust. If convenient, wrap paper or gunny sacks around them. It is an easy matter to clean a chimney, says one woman who has tried it. Just throw a piece of zinc into the fire—a piece ripped off your old washboard will do—and it will do the work, and do it well. This hint is worth remembering and passing along. A good polish to cleanse and brighten the nickel plating on stoves can be made as follows: Take equal parts of whiting and baking soda and mix to a thin paste with water. Apply with a soft rag, rub a little, wipe off with a clean, moist rag, and then rub dry with tissue or any other soft paper.

Closets, Chests and Cupboards

Clean the closets thoroughly. Remove all contents and sort them. Remove to garret all that for which you have no possible use the coming season, clean all that need cleaning, replace what is wanted, after thoroughly washing, and disinfecting, if need be, all shelves and parts of the closet. If you find moth traces, sprinkle borax in all dark corners and spray some Persian insect powder into cracks and corners. Or use liberal quantities of borax mixed with a little powdered sugar to destroy insects.

When cleaning chests or closets where clothing is kept, heat a small piece of iron red hot, place it in a metal bucket, put it in the cupboard and pour over it a small cup of vinegar. Shut the door quickly and tightly and you will not be troubled with moths, as the steam permeates every crevice and kills everything. Of course, contents should first be removed from the closet.—[R. D., Md.

Shades and Curtains

Take the old shades off the rollers and with a long stitch hem the top ends on sewing machine. Put the sticks in the new hems and tack the old hems to the roller.

When your window curtains acquire that dingy, dust-stained appearance, so annoying to a neat housewife, try cleaning and freshening their surfaces with corn meal. Spread the shades flat on a large table, heat the meal thoroughly in oven, then rub the shades with the hot meal with a brisk circular motion of the hand, as though trying to rub it into them. Then, with a clean, dry cloth, remove all traces of the meal. You will note with pleasure that dirt and dust stain have disappeared with the meal dust.—[F. T., N D.

To mend curtains, wash, starch and iron, or dry on frame in usual way. Then cut generous pieces of some old curtain large enough to more than cover the torn or worn places. Dip these pieces in thin starch, lay over the holes, and iron dry. The pieces will adhere, and, skilfully done, the mending will not show.

Screen Doors and Windows

Clean and paint window and door screens early in the spring, so they will be ready in time. Wash or scrub with soapy water, rinse and dry in sun and air. Paint with very thin, black or dark green paint. It is improved if mixed with a small part of varnish.

Window Washing

Don't forget the blinds. Brush the dust from all slats and corners and wipe with a damp cloth. Dust sash and glass before washing. Have plenty of water, but don't slop. Wash sash first with borax water or soapsuds, and dry with a soft, thick cloth. For the glass there are many good commercial, non-scratching scouring soaps to be had. It is better not to use much soap. Put kerosene or ammonia in the water, or a combination of both, allowing 1 tablesp of each to a qt of water. Dry with a soft cloth and polish with a lint-free cloth, or with tissue paper. Never wash windows when the sun is shining on them. Remove paint spots with clear ammonia, kerosene, turpentine, oxalic acid, or strong solutions of vinegar or sal soda, hot. Can also be rubbed off with coin.

Floors and Walls

If you have fitted carpets, take them up. You would do better not to relay them, but to paint and varnish floors and convert your carpets into rugs. Fitted carpets are more or less unsanitary, hard on the housewife, and entirely out of date. Clean floor thoroughly, fill cracks (see directions elsewhere), and either stain or paint, and then varnish. This will kill vermin and germs.

Carpets should be carried out of doors, spread on the grass, and thoroughly beaten on both sides—the wrong side first. If very dirty, hang up on a line and beat some more. But the very necessity of so much cleaning proves that fitted carpets are not sanitary. The colors of old carpets can be brightened by wiping with ammonia and water.

When laying matting, first wash and dry the floor thoroughly, then place several thicknesses of newspapers under it. It will prevent wear and catch any dust that sifts through. When matting gets dingy, wipe off any stains or spots with damp, soapy cloth, and then sweep thoroughly, lastly freshening it by going over it with a cloth dipped in ammonia water. To clean, sweep twice, the first time along the grain of the straw, the next crosswise with a soft broom. Then dissolve a handful salt in a pail of tepid water and wash quickly. Use well-wrung cloths. Cover grease spots thickly with prepared chalk and soda, wet with turpentine, let it remain two days, then brush off with stiff brush.

Linoleum or oilcloth, after being washed, can be brightened by wiping with skim milk. Floor varnish applied to new linoleum will save the pattern from wearing off.

After carefully cleaning stained and varnished floors, dry thoroughly and wipe with a cloth dampened with kerosene and dipped in furniture polish.

Clean papered walls by wiping with a cloth mop tied over the broom brush, and remove stains or streaks with a dough made of bread and ammonia water.

To clean painted walls, make a thin paste of baking soda in a dish, using cold water. Dip a moist sponge or cloth in this and apply to painted walls. Wash off with warm, thin soapsuds, and dry with a clean cloth. This is an exeellent method, as it leaves no streaks, and the walls will look like new.—[W. M. G., N J.

Floor and Wall Crack Fillers

For the floors these are made of boiled flour paste containing alum, and shredded newspapers stirred in until thick enough. Boiled glue and sawdust are used the same way, or just plain putty. For wall or ceiling cracks use plaster of Paris mixed with vinegar and water, or borax and water, to prevent too rapid hardening.

Whitewashing, Painting or Papering Walls

Directions for this work will be found in other chapters of this book. But if you have no need of so treating the walls, simply brush and wipe them. New walls that have never been papered must first be treated to a coat of glue "size." The same holds good when new walls are to be painted with oil paint. Whitewashed walls must be washed off with vinegar and water, before papering. To make size, soak 1 lb glue in enough cold water to cover it for 12 hours, then add 12 qts boiling water and 1 tablesp powdered alum. Before putting this sizing on walls, wash off all kalsomine or whitewash. If the walls have been rough plastered, smooth down the projecting grains of sand with a piece of hard wood, and if they are very bad, apply a thin coat of paste and allow it to dry, before papering.—[M. G. W., Col.

Beds and Bedding

Corn husks and sweet straw both make good, comfortable beds. The husks should be free from stalk or silk and perfectly dry. Dry oat chaff or white printing paper, cut fine, make good filling for pillows.

To clean feather pillows, empty the filling into a bag of cheesecloth, tie the mouth tight, and wash in a tub of strong white soapsuds, slightly tinged with ammonia. Souse up and down 10 to 15 minutes, then rinse in clear, warm water twice. Do not squeeze, but hang to drain and dry in a slightly warm and breezy place. When half dry, shake up the feathers several times. When all dry, place the bag in a thicker one

and whip vigorously with a whip or switch. The feathers will then be as good as new. A feather bed can be washed in the same way, but it takes much time, patience and water.

Feather beds or pillows should be thoroughly aired every week. It is better not to place them in the sun, as there is sometimes oil left in the quills, which the rays of the sun make rancid. They need air rather than heat. When you want to put them away for the summer, tie them loosely in sheets and hang them in an airy garret or room. Packing in chests hurts the feathers.

Our grandmothers used to expose feather bedding to heavy, warm, spring showers, letting them become fully soaked, then dry them in the wind, and while drying, shaking and turning and stirring often. They also waxed the inside of the ticks, to prevent feathers working through.

Now that wire and chain springs are used so much on bedsteads, it is economy to buy a piece of felt to place between the wire and mattress. Newspapers will do as well, but need replacing often. Otherwise the cover of mattress will be rusted, or worn out.

See chapter on household pests for bug remedies.

Mending and Cleaning Furniture

If you have any furniture that needs mending, attend to that before the actual housecleaning begins. The articles will then be all ready to replace, when you are through.

See chapters on glues and cements, also paints and stains, including crack fillers, etc. Use benzine to clean upholstered furniture and banish moths. White stains or discolorations on the highly polished wood can be removed by gently rubbing with spirits of camphor or essence of peppermint. The stains will disappear in a few hours.

Leather furniture should be washed clean with warm water, thoroughly dried, and then polished off with a mixture of equal parts white of egg and water. Flaxseed water is also good.

Equal parts of skimmed milk and water, warmed, will remove fly specks from varnished wood without hurting the varnish.

Old mahogany is apt to get filmy, no matter how well cared for. Wash it, when it gets so, with weak, tepid suds, and then polish with French polish, being careful not to use it near any fire or flame.

The stains left by jugs or cups of hot water or hot dishes may be removed by rubbing with kerosene oil, afterward pouring on a few drops of alcohol, and rubbing it dry with a soft cloth.

To Clean Tables, Tubs and Sinks

Rub enameled sinks or tubs well with a cloth saturated in kerosene oil. Then rinse with warm water and soap.

Kitchen tables may be made very white and clean by using ½ lb sand and ½ lb lime. Work some dissolved soap into the dry ingredients. Apply the mixture with a scrubbing brush and wash off with plenty of cold water.—[B. E., Ore.

Polished tables may be kept in good condition if about once a week they are rubbed with a mixture of equal parts of turpentine and olive oil. Apply with a piece of flannel, afterward polishing with a dry cloth.—[A. R. D., Ida.

My sink is iron. I keep it from rusting by cleaning well every night before retiring, drying with a dry mop cloth, and then rubbing well with kerosene.—[A. G., Mass.

Furniture and Metal Polishes

See chapter under this head containing recipes for preparing home-made articles. They are very satisfactory and can be made cheaply. Always remember not to use anything containing benzine or naphtha in a room with light or fire.

A Substitute for Hardwood Floor

If you want to use a rug in parlor or dining-room, and your floors are of soft wood or otherwise impossible, make a border of a cheap grade of oilcloth, using the underside, painting it the color of hard wood, and tacking it around the sides of the room. It is an excellent substitute.

To Clean Kitchen Drain Pipes

Once a week, in the evening, just before retiring, pour into the sink drain a strong and hot solution of lye or of sal soda. It will mingle with the grease in the drain pipes and form crude soap during the night. Next morning pour in a kettleful of boiling water. Use a fine strainer tin in your sink, and never pour in grease, tea leaves, or coffee grounds, or anything that will clog.

About Dish Cloths and Towels

In all too many homes these articles are neglected and allowed to do duty while in a filthy and highly unsanitary state, constituting a serious menace to health. It is a small matter, entailing practically no expense and little expenditure of time, to have on hand always a sufficient number of clean dish-cloths and towels. The former should be boiled

every day in soda or borax water and dried in the fresh air, while the latter should be washed often and thoroughly enough to insure a towel as clean as those used for the face. The so-called "chain dish cloths" should also be frequently scalded with soda water.

To Make Brooms Last Longer

Scald the broom with hot soda water or soapsuds. Do this every week and the broom will last many weeks longer. While wet, the broom should be pressed into natural shape and dried. Hang the broom up. Put a little hook in the end of handle and have a nail for it. It will last twice as long as if stood in a corner.—[D. H. I., Del.

To Remedy Damp Walls

Line the damp part with sheet lead, not thicker than that used to line tea chests. Fasten with copper nails to the wall. Paper can then be put on wall. Another method is to cover the damp part with a varnish made of ¼ lb shellac to 1 qt naphtha. The odor soon disappears and the wall is covered with a hard coating impervious to damp and to which the paper may be attached in usual way. Another remedy is to wash the walls with a strong solution of alum and water.

Scouring Soap

Dissolve a cake of white soap in a little water by gentle heat, then mix in equal quantities of sifted whiting and very fine white sand, and about one-quarter that quantity of powdered sal soda and borax. [See laundry chapter for other soaps, and homemade cosmetics for toilet soaps.]

Benzine for Cleaning

Benzine as a cleanser is invaluable in every household, not only for cleaning spots on clothing and kid gloves, but for various purposes about the housework. Unsightly grease spots, finger marks on woodwork, or dirt on windows yield to a few drops of benzine with scarcely any labor expended. The rims formed on bath tubs or wash basins, and the spots on marble, vanish quickly if rubbed with a cloth saturated with benzine. In fact, all bath or bedroom necessities can be kept spotless with benzine. Care should be taken not to use it near or in a room with a fire or flame, and also remember that but a few drops of the powerful benzine is all that is needed at a time.—[F. T., N D.

To Clean a Clock

Many an old clock which refuses to run or fails to keep good time could be made to do duty again by soaking the works in kerosene oil. If the clock is of metal, the kerosene may be poured by the spoonful over every part of the works, but if the clock case is of any material which would be injured or made unsightly by the kerosene oil, the whole works should be carefully removed and thoroughly cleaned with kerosene oil, and then returned to the clock. It is said a tiny dish or tin cover, containing a sponge and kerosene oil, placed inside of the clock, will prevent dust from accumulating on the works and keep the clock in good condition.

To Clean Paint

All the caustic alkalis deface paint. In washing painted surfaces, therefore, it is best to use borax soap or borax powder, reinforcing both with liquid ammonia, for very dirty paint. Whiting mixed to a cream with tepid water is also good.

To Freshen Gilt Frames

Carefully dust them, then wash gently with 1 oz baking soda beaten with the whites of 3 eggs. Touch up scraped places with gold paint. Or, take sufficient flour of sulphur to give a golden tinge to 1½ pts of water, put 4 or 5 onions in this, and boil until the onions are very soft. Strain, and when cold, wash the frames with this solution, using a soft brush. When dry, the frames will look like new.—[M. H., S D.

To Mend Kettles

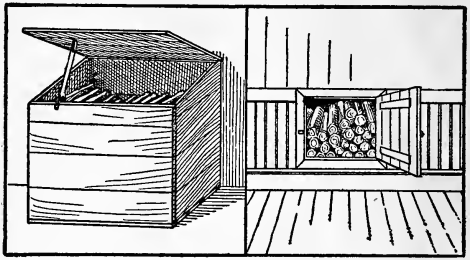
When a water pot rusts through where the sides join the bottom, it is not necessary to throw it away, or to carry it to the tinner's. The holes may be effectually stopped by covering them inside with a small piece of linen dipped in copal varnish, the tin being previously well cleaned and dried. Allow the varnish to harden thoroughly before using and the vessel will be perfectly water-tight.

Holes in iron kettles may be stopped by driving in plugs of lead and heading them down well on both sides of the iron. So long as water is in the kettle, the lead will not melt. [See also chapter on soldering.]

A Handy Wood Box

Don't keep your wood box in the kitchen to make dirt and catch dirt, but have it on the porch or in the woodshed, built

against the wall, and have a small door made opening from this into the kitchen. It is easily emptied, easily filled and saves much space.



OUTSIDE AND INSIDE VIEW OF WOOD BOX

Cleaning Hints

To clean soiled sponges dissolve a piece of soda or a spoonful of borax in a basin of hot water. Let the sponges stand in this for some time, to allow the dirt to soak out. Rinse thoroughly in hot and then cold water. Let dry in the sun out of doors.—[E. K., Mass.

Wet Indian meal, scattered generously over the carpet, before sweeping, will brighten and cleanse it wonderfully. Salt and small pieces of wet newspaper or damp tea leaves will also brighten it, but are not so effective as the meal.—[D. H. I., Del.

To remove match marks from paint, rub the spot with a cut lemon. Then, to prevent a repetition of the offense, apply a little vaseline and rub the spot dry with a rag. It will be difficult to again strike a match thereon.—[F. E. F., O.

Moth infested clothes closets may be cleaned by washing with a strong decoction of tobacco and spraying with spirits of camphor.

Broken egg shells and soapsuds will clean a bottle. Rinse thoroughly. A small handful of shot will also cleanse them, but be careful not to break the bottle. To remove odor from bottles fill with cold water, let stand in any airy place, uncorked, for 3 days, changing the water each day.

Cooking utensils and other articles which retain the smell of fish can be cleansed by being filled with fresh earth. Knives and forks can be stuck into fresh earth and left there for an hour. Then wash, and the odor will be gone.—[F. E. F., O.

When I do not lift all my carpets in the spring, I scatter salt liberally over them before sweeping; if I think necessary, I repeat this process several times. Then I go over the carpet with ammonia water, using 1 teasp to 1 qt water. It is wonderful how this will brighten and help the appearance of a carpet.—[J. C., N Y.

Don't forget the backs of the pictures or the tops of the doors. Quantities of dust settle in these places, and vermin are often found there.

After the juice has been squeezed from lemons do not throw away the peel. This is excellent for cleaning brass articles of all kinds. Dip the peel in salt and fine bath brick and rub briskly over the article.—[Mrs G. E. R., Mass.

If the stove is rusty, remove all the rust possible with a stiff wire brush and wash with strong vinegar before polishing. Then proceed as usual.

When you upset hot fat on floor or table, throw cold water on it at once. This cools and hardens the fat, and prevents it from spreading and sinking into the wood. Scrape it off and wash with hot soda water and sand.

To make a kerosene dust cloth, saturate a soft cloth with kerosene oil and let it evaporate. The cloth will then dust furniture with much better results than usual.

For metal cleaners and polishers, washing and cleaning pastes and polishes, and furniture polishes, etc, see other chapters in this book. These articles can easily be made at home, at small expense.

All Sorts of Pointers

Yellow soap thickened with whiting and rubbed into a leak will sometimes stop a leak when other things fail. This, of course, applies only to the smaller leaks and is at best but a temporary help-out.

Tack a small piece of rubber overshoe to bottom of step-ladder legs and they will not slip on a wet floor. It's better to use precaution and save a hard fall with a broken leg or arm as a result. Most accidents come as the result of haste or lack of precaution.

Take the handle of a worn-out mop, and fasten a large bunch of old stockings securely to it, in convenient shape. It is best to split them open from top to bottom before fastening them to the handle. This makes a good mop.—[M. B. M., Ind.

If the cellar is dark, paint the bottom step white. This will prevent many mishaps.

Insert part of an old broom handle in the tin handle of your dustpan. You need not stoop then to use the dustpan.

When you need a small funnel to pour some liquid into a bottle, just take a thick, smooth white paper, roll into a cornucopia, cut off a bit of the point, pin securely, and use.

Throw copperas on decaying matter and it will kill the foul smell that rises from it.—[C. L. A., O.

To Stop Leaks Around Chimneys

Leaks around chimneys may be stopped effectively by applying a paste made of tar and dry sifted road dust. The paste should be well lapped over the shingles, to form a collar.

To Harden Wooden Pulleys

Boil the pulleys about 8 or 10 minutes in olive oil, after which let them stand in a warm place for a few days before using. Treated this way the pulleys will not be so easily affected by weather conditions.

To Bronze Plaster Casts

To make a good, green bronze, such as is used for French statuary, dissolve 1 oz salammoniac, 3 oz cream of tartar and 6 oz common salt in 1 pt hot water; then add 2 oz copper nitrate dissolved in a pint of hot water. Mix well together and apply with a brush.

To Preserve Steel from Rust

Sleigh runners, skates and other steel articles, which are only in use for a limited time during the year, may be effectually preserved from rust by giving them a coating of common lard (free from salt and water), and pulverized black lead with a little camphor. To remove rust from steel, apply kerosene oil freely. Allow the oil to remain on until the rust is loosened, when it can be rubbed off easily.

Cheap Burglar Alarm

A simple little brass wedge with a small piece of the same metal attached to its sloping side makes a cheap but effective burglar alarm. The wedge has only to be pushed from the inside between the closed door and the door sill. Any attempt to open the door from the outside would only tighten the wedge. A percussion cap can be inserted between the wedge and the piece of the metal riveted upon it. The slightest attempt to force the door would explode the cap. This style of wedge may also be made of hardwood with a little piece of tin riveted on. A hole may be bored in the wedge, so that it may be temporarily secured to the floor with a nail, about 3 inches in front of the door.

Vermin and Insect Pests

Dangerous to Health and Prosperity

WE are all agreed that vermin and noxious insects are unclean and undesirable. It may not be as well known that these pests are, also, a positive danger to human health and prosperity. Careful investigation shows that flies, mosquitoes, fleas, rats, and biting insects generally, carry and cause such terrible diseases as yellow and typhoid fevers, malaria, diphtheria, dysentery, and other intestinal disorders. They are a distinct menace to the health of infants and are justly held responsible for the deaths of many helpless children. In many agricultural sections the prevalence of the insect plague has reduced largely the value of both real estate and live stock. Dairies have been abandoned and large areas of land lie idle in excellent localities because of the nearness of mosquito breeding swamps, which send forth millions of these blood-sucking pests to torment man and beast, and drive them to retreat. Moths and carpet beetles destroy much valuable property and are unprofitable creatures. They should be killed. Cockroaches, bedbugs, ants, fleas, rats, are all filthy, all more or less dangerous to health, and certainly inimical to human happiness and prosperity. They can all be kept out of our homes by watchfulness, care and cleanliness. In using the recipes that follow every care should be taken to prepare exactly as described. If unsuccessful, the trouble can usually be traced to some error in manipulation, quantities used, or, possibly, poor material. "Try again," is an excellent motto in such cases. The recipes given are the best of a large collection, carefully selected,

How to Avoid Them

An ounce of prevention is always worth sixteen of cure. It is best to say right here that most pests exist and thrive in and around homes because of the carelessness or indifference of the occupants. Take the mosquito nuisance. Mosquitos cannot live without water. They don't need much, either. They will increase and multiply in an old can, a discarded cup, a broken bottle, in any hollow or hole which will contain the least bit of moisture. The remedy is simple. Destroy all such breeding places. If they come from a pond which cannot be drained, pour kerosene oil over the surface. It takes but little and it will kill them. One ounce of oil to fifteen square feet of water, renewed every month, must be used. There are bodies of water where oil is impossible of use. Certain fish can then be introduced to these places, which feed on the larvæ.

Flies are found on all filth or garbage. They are nature's scavengers. It is their duty to try and "clean up," by consuming all putrefying matter, whether it be stable manure or decaying food. They carry disease germs, and as one mother fly lays over a hundred eggs at a time, most of which become adult flies in two weeks, their menace to health is appalling. If, however, every home is kept absolutely clean, well aired, well screened, and if no vestige of food or filth is left about for the insects to feed upon, their numbers would be appreciably reduced in a very short time. Take strict care of barns, sheds and houses, keeping them absolutely clean, and you avoid these pests.

The hardest insect to destroy is the bed bug. Eternal vigilance is the price of freedom from this dirty pest. It is hardy and prolific. It inhabits both clothing and furniture, is found in cracks in floors and walls, behind loose wall paper, in nail holes, back of picture moldings, and they will travel from one apartment to another, and from one house to another, in search of victims. Daily watchfulness is necessary to avoid visits of these pests, as they are very tenacious of life. Each mother bug lays several batches of eggs every season, hatching into life in about seven days.

Moths may be avoided by careful and early storage of furs and all woolen garments, by early screening of doors against the moth miller, and by admitting sun and air liberally to all parts of the house, as well as by discarding heavy carpets and tapestries.

To discourage ants from one's home, leave no crumbs of food anywhere. Cover tightly all sweet and fatty foods, and thus fail to offer them any inducements to come. The same course will eliminate rats and mice. They come to eat. If they find nothing they will try some more profitable place.

Fleas may be largely eliminated from one's list of pests by the kindly and proper care of pet dogs and cats. If you keep these creatures free from such parasites, you help yourself also, as fleas and their eggs usually come from the coats of pet animals. The absence of floor cracks is a help in avoiding the flea pest, as their eggs hatch in such crevices. Fill up all such cracks. Remember that sunshine, fresh air in plenty, absence of food to attract insects or vermin and cleanliness are indispensable adjuncts to aid in a complete and permanent extermination of any kind of vermin or insect.

About Flies

The fly is largely a domestic insect, the most common species being the ordinary non-biting house fly. Its mouth is peculiarly adapted to the lapping or sucking of foods and liquids, and it cannot bite or pierce flesh. The female lays her eggs in any kind of manure or decaying matter of any description. Each mother fly lays one hundred or more eggs at a time, and these pass through the four stages from egg to adult life in ten to fourteen days. This accounts for the immense numbers of flies, when they are permitted to breed unmolested.

The blowfly, or "bluebottle," deposits its eggs on any handy animal substance, preferably rotten. These eggs are called "fly blows." They hatch in a few hours into maggots. To show their voraciousness, Linnæus says that the maggots formed from three flies would consume a dead body more quickly than a lion would. So rapacious are they that they increase two hundred times their original weight in twenty-four hours. The flesh fly is a larger species. It drops living worms on dead flesh, the worms, or maggots, being formed within the fly.

The cheese fly is small, black, with transparent wings. It lays its eggs in cracks in cheese, two hundred or more at a time. These develop into skippers, which live in and consume this cheese.

Some fly maggots spin cocoons. Others are simply encased in hardening skin, a sort of chrysalis, from which the fully developed fly escapes by forcing its way out with its head.

The plague of flies would be insufferable did not so many die. Few grow old. Most of those hatched during the hot weather die when frosts come. A very few escape, finding warm shelter, and a few more pass the winter in a chrysalis state.

There are dozens of methods by which to reduce their numbers or get rid of them altogether. Fly papers and poisons of various kinds, insect powders, screens, traps, fly drivers and fly spatters are all efficacious.

Traps of various kinds, from the patented wire cage to the tumbler half filled with strong soapsuds, covered with a card or slice of bread, a hole made in center, and under side smeared with molasses, are effective in a more or less degree.

The ordinary whisk broom is a good individual fly catcher, as is the ordinary fly "spatter." To drive them out of a room, nothing is better than many long, narrow strips of newspaper tied to a flexible stick. The flies are frightened by noise and movement, and if there is only one avenue of escape left, they seek it. Following are some useful recipes:

Fly Poisons and Repellents

Mix together 1 teasp each of ground black pepper and brown sugar. Moisten with thick cream or condensed milk. Very effective.—[A. G., Mass.

Beat the yolk of 1 egg, add 1 tablesp molasses and 1 tablesp black pepper, and spread thin on paper or plate.—[F. L., S C.

Boil ¼ oz quassia chips in 1 pt water. Mix with 4 oz molasses. Put in shallow plates.—[S. D., Man.

Boil together equal parts glue and molasses. Spread, while hot, over common brown paper, with a brush. Place a sheet wherever the flies congregate and you will soon be rid of them.—[E. K., Mass.

Boil together 4 oz lard and 1 lb rosin. Spread thinly on manila paper, place one sheet on top of another, and press together. When wanted, tear them apart and they are ready for use.—[Mrs A. R. D., Ida.

To 7 oz each of raw linseed oil and molasses, add 2 lbs yellow rosin. Mix by heating. Spread while warm on sheets of manila paper.—[R. M. F., Me.

Add 2 teasp formalin (40 per cent formaldehyde) to a soup plate of water. This is very effective, but is a deadly poison and must be used with care.—[A. G., Mass.

Make a very strong green tea. Sweeten well and place in saucers where flies are most numerous.—[L. E., Mich.

Procure some quassia chips from your druggist, put a few on a dish, pour hot water over them and sprinkle with a little brown sugar. Place where flies are most troublesome.—[Mrs C. S., Okla.

Put a few drops of oil of lavender on a sponge, place in a small dish, and pour some boiling water over the sponge. Place this near screen doors where flies gather. The odor will scatter them, and if placed in a room, will make it much easier to drive them out.—[Mrs J. I., O.

To drive flies from the house, saturate small cloths with oil of sassafras, and suspend them in windows and doors. The flies will soon leave.—[F. E. F., O.

Try keeping flies off the screen doors and windows by rubbing the framework of them over with kerosene occasionally. The odor seems to be offensive to flies.—[Mrs Mary E. S., N Y.

The germs of consumption have been discovered in the bodies of flies caught in rooms occupied by consumptive patients.

Don't let flies come in. Well-fitted screens will keep them out.

You can't keep flies out of a house if there are piles of horse manure near the premises for them to breed in.

Sometimes flies are found in a well-screened, well-kept house. The smell of food draws them down chimneys where there are open fireplaces.

It is said flies will not alight on frames or furniture brushed over with water in which three or four to a pt of onions have been boiled.

Mosquitoes

This common pest needs no description. Every one recognizes it at sight or hearing. Its habits are interesting and not so well known. The adult insect lives on land, feeding on liquid food, which it sucks up through its tongue. The female is obliged to lay its eggs in the water, because the larva and young can only exist in water, coming to the surface for air. If this air is cut off, they die without developing into mosquitoes. It, therefore, follows if we render it impossible for them to secure this air, that we exterminate them easily and thoroughly. They lay their eggs on calm waters. Running water does not attract them. So cover the rain barrels, drain pools, or cover them with oil, and allow no breeding places anywhere.

To discourage mosquitoes, mix equal parts of sweet oil and oil of thyme. Spread on paper and hang the paper in your room. Also rub a little on face and hands when going to bed. [A. A., Ga.

To keep away mosquitoes, dip a piece of sponge or flannel in camphorated spirits and tie to the top of the bedstead.—[M. A. P., Ill.

To drive out mosquitoes and gnats, when it is impossible to keep them out, as in the case of camping out in tents, a little brown sugar burned on coals is generally effective.—[E. M. P., Mo.

A bottle of oil of pennyroyal left uncorked in a room at night will drive out mosquitoes.—[L. E., Mich.

Mosquitoes dislike tobacco. A bit burned on a hot stove lid will often dispel them.

Cockroaches

This title is applied to several species of the roach family. In some places they are called "water bugs," in others "black beetles." But whatever called, they are the most disgusting insects known. They spoil more food than they eat, and their fetid odor betrays their presence in a house, even when they are themselves invisible. General rules for abolishing them include light and sunshine freely. They are distinctly creatures of the dark and dampness, and do not like fresh air and sunshine. Do not leave a drop of liquid or a crumb of food within their reach. It will call forth an army of them. They often, especially the beetle specie, migrate from clean, wholesome homes to those more agreeable, because more dirty. Roaches are wary. Try new remedies when the old ones fail.

Spread insect powder liberally over the floor of the room they infest. Puff it into cracks. Fill the air with it. Scatter it everywhere, and then close the doors and in the morning sweep up the powder and the roaches and burn them.—[E. P., Mass.

Boil poke root until tender. Mix the water in which it was boiled with molasses, to the thickness of syrup, and spread on plates. The roaches will eat and die by scores.—[Z. T. T., N C.

Mix together ½ lb powdered sugar, ½ lb borax and 5 cts worth of paris green. Puff this (with bellows) around the haunts of the roaches. They will speedily disappear. If you have children or household pets, omit the paris green (deadly poison), for fear of accidents.—[M. P., Ill.

Use equal parts of powdered borax, powdered sugar and cayenne pepper. Sprinkle this mixture on pantry or cupboard shelves under the paper, under the paper in drawers, along edges of carpet, over top of window and door casings, or any place the roaches are apt to frequent. If used persistently, this will not fail to rout them.—[B. P. H., Okla.

Equal portions of corn meal and red lead, mixed with molasses, and spread on plates, will destroy roaches.—[A. A. S., N J.

Slices of cucumber placed generously in and around the haunts of roaches will banish them entirely, after three nights' application.—[A. A., Ga.

Mix equal parts wheat flour, plaster of paris and powdered sugar. Distribute on shallow plates or boards, and place in corners frequented by the roaches.—[V. D., Ala.

Put a qt of molasses sweetened water in the bottom of a deep, smooth, round bowl. Set it near roach retreats. Place a piece of carpet around it to give easy access to top. They will enter in crowds, but cannot get out.—[R. E., Ky.

Make a paste of red lead, flour and water, roll out thin and

dry into wafers. They are highly poisonous and must be kept out of the way of children and pets. Placed in haunts of pests, they eat them and die.—[A. G., Mass.

Fleas

Once installed in a house, these voracious mites are hard to exterminate. The most thorough methods must be used. Carpets should be taken up, steamed, beaten and purified. Floors should be washed in the hottest soapsuds possible. A thin coat of paint on floors is useful in killing the flea and its eggs. All dust must be removed, as the eggs thrive best in dry, dusty places, and hatch in two days after being dropped. Fumigation is an excellent way of destroying these blood-thirsty pests. They are small, shiny insects, black, reddish or brown; have long legs, especially adapted to leaping purposes, and increase rapidly. From the time the egg is laid until the pupæ becomes a full-grown adult flea is a scant forty days. Ordinary remedies are scorned by this hardy mite, clad in mail and able to live, if necessary, on dust, if no other food be obtainable. Since this pest can jump two hundred times its own stature and recognizes danger at a glance, it is practically impossible to catch and kill him. He must be dealt with otherwise. A flea bite poisons some people, but, though annoying by the intense itching it causes, it is never serious, and applications of salt water usually give speedy relief. The swelling resembles that of hives, for which it is often mistaken, but it may be distinguished by the fact that flea bites usually come in clusters of three or five, while hives are separated.

Take air-slaked lime, fairly strong. Scatter it liberally over barn, cellar and house and porch floors, removing all coverings. Cover every foot of surface. Let it remain over night. Sweep up in morning and then mop up with hot water. When dry, sprinkle lime dust thinly over same places. If carpets are relaid, sprinkle them with insect powder.—[H. M., Mass.

Place sticky fly paper in flea haunts. It is especially useful under beds and large pieces of furniture. The fleas are unable to extricate themselves when they jump on the paper.—[S. L., Miss.

Spray every article in infested room with benzine, taking every precaution against fire and flame coming in contact with the fumes; both during and for some hours after the operation. Spray floor and corners liberally.—[R. M., Ga.

To kill fleas in beds, spread insect powder over mattress. Sift it over the springs and in every crack of bedstead. Use it most liberally, and repeat until fleas disappear.—[L. W., N J.

In a room infested with many fleas, a boy may catch many by wrapping a piece of fly paper about each bare leg above the

ankle, and walking up and down the room. They jump for his legs and stick to the paper.—[Mrs P., Mass.

Fleas dislike the odor of oil of cedar, dried or green tansy, moth balls, oil of pennyroyal, oil of sassafras, tobacco, camphor and kerosene oil.—[B. L., Ct.

Bed Bugs

Powders are practically useless in getting rid of this elusive pest. They conceal their eggs so deeply and penetrate so far into concealment themselves that the faithful and persistent use of various liquids is the only effective remedy. Whatever liquid is used should be poured liberally into every suspicious hole or crack, or injected with a syringe or a spring bottom oil can. Boiling water will kill them. Kerosene oil is sure death. Oil of cedar is good, but more expensive. Probably the best way to get rid of bed bugs, if the room can be made air tight, is to fumigate it with sulphur. Take out any furniture likely to be injured by the fumes (especially metal), close windows and door, and put an oz of powdered sulphur on an iron pan of hot coals placed on some bricks in the middle of the floor. After it has burned out, paint all the cracks with a strong solution of corrosive sublimate and wood alcohol (both poisons) and carefully examine all furniture before replacing it.

When papering a room where bed bugs swarm, put a cupful of household ammonia in the paste used, or stir in a pt of powdered alum. Fill every tiny hole in walls with putty. Leave no hiding places.—[E. T. M., Neb.

Fill every crevice in bedstead with soap or putty and give wooden bedsteads a coat of varnish. Use metal beds and springs when possible. Shake out clothing and discard stuffed furniture from rooms which they infest.—[L. F., Kan.

Mix wood varnish with turpentine, equal parts, and apply it to all places where bed bugs congregate.—[E. L. M., N Y.

Mix 1 oz corrosive sublimate (poison) with 8 oz turpentine. Apply with brush. The bugs shun a place once coated with this mixture.—[F. B. H., Okla.

Mix equal parts carbolic acid (poison) and coal oil, and apply with a small paint brush to each crack and crevice in the room, and to the bedsteads. Have the doors and windows open when using the preparation, or it will make you sick. When done close the room tightly for two days. Air well before using room.—[J. C. V., O.

Put red precipitate in coal oil, and apply the mixture to the bedstead and crevices where bed bugs may hide, using a feather.—[Mrs C. S., Okla.

To 4 oz oil of cedar add 4 oz corrosive sublimate. Use this in all cracks and crevices about floor, walls and bed, applying

with small paint brush or feather, or atomizer, being very careful in handling, as the preparation is a deadly poison.—[Mrs C. E. S., Cal.

Beat the white of an egg to a stiff froth, add as much quicksilver as it will take up, and apply with a soft brush to every crevice in bedstead and to the woodwork.—[Mrs S. E. K., R I.

Mix together 7 oz turpentine, 1½ oz camphor, and ½ oz corrosive sublimate. Apply with brush to bedsteads several times a week between each application. This is sure to kill them, but must be handled carefully, as it is a deadly poison. [J. L., Pa.

Gasoline is a sure remedy for bed bugs. It will not hurt the finest fabric, but it is inflammable and should not be used near a fire, or a light, and no light should be carried into the room until the odor has disappeared. Take removable articles out and apply the liquid with a whisk broom, rag or brush. Floors and woodwork may be washed with gasoline. The bedstead and springs should be thoroughly saturated. The remedy is effective. No bug can survive such an application.—[E. G., Ia.

Remove all furniture. Wash woodwork and walls with a solution made by mixing 1 tablesp carbolic acid in 2 qts water. Wash bedstead and springs and all wooden furniture with same. Fill up every nail hole and crack in the room with carbolized soap or putty. Whitewash ceiling. If room is papered, do not leave a hole in which a bug can hide, and put on paper with paste in which oil of sassafras has been dissolved. Use 1 oz to each 2 qts paste. Before returning bedstead, fill up every crevice with carbolic soap or putty, and varnish it and the springs with prepared varnish made by allowing ½ oz carbolic acid to every qt varnish.—[L. P., O.

Rats

So common a plague is this four-footed pirate that he hardly needs description; but it is well to say that the rat is far more than a mere nuisance, or destroyer of property. He is a danger because of his traveling propensities. He goes from the house of disease, to carry its seeds to those in health, on his feet and in his mouth and excretions. Many a case of illness, whose cause was mysterious, has been traced to this filthy rodent's agency.

Rat Poisons

Melt 1 lb lard in a jar plunged in hot water at 150 degrees. Mix with it ½ oz phosphorus to each lb lard. Add 1 pt whiskey. Close the jar while at high temperature, withdraw from water; shake until the phosphorus is diffused. The liquid, cooled, will be a thick white compound. As the spirit separates, pour

it off. It can be used for more compound. When slightly warmed, the mixture may be poured into another of wheat flour and sugar, and after mixing, be flavored with oil of rhodium or anise seed. Make into pellets and place in rat holes. Being luminous it can be easily seen, and as it is palatable, it will be eaten greedily, proving fatal.—[Ex.

Mix equal parts fine plaster of paris and flour. Keep dry. Put the mixture near rat holes and put a vessel of water beside it. The rats eat and then drink. The plaster hardens and kills them.

Thoroughly mix 3 lb flour, ½ lb powdered sugar, 2 lb sulphur and 2 lb phosphorus. Place in and around rat holes.

Mix powdered nux vomica with oatmeal and lay it around rat haunts, out of reach of children, chickens, pets and stock.

Cut corks as thin as wafers. Stew them in grease and place them in rat holes. Dried sponge bits dipped in honey sprinkled with oil of rhodium is said to cause them to depart.

Buy 5 cts worth of calomel at drug store. Spread bread with butter, and then spread the calomel into the butter. Place where the rats come, also put water where they can drink. They will disappear in a few days.—[Mrs A. A. S., N J.

A lb of moth balls, carefully distributed around the haunts of rats, will drive them away.—[W. H. H., Va.

On pieces of old shingles place 1 teasp molasses, and on it scrape a very small amount of concentrated lye or potash. Put the shingle where the rats run, and the result will surprise you.—[R. M. F., Me.

Rat Traps

Cover a barrel with stout paper, tying the edge around the barrel. Tilt a board up to it, so the rats can easily reach the top of barrel. Place food on top for several days, until the rats think they are safe in going there for food. Then fill the barrel half full of water. Replace paper, cutting a cross in the center and the first rat goes through. The paper returns to place and many rats share his fate.

Fill a large, deep vessel to within six inches of top with water, cover remaining space with bran and set near rat holes. Dozens have been drowned by this simple device.

Why not keep a good cat? Or a goat? Rats are said to hate goats and they are known to dislike cats.

To discourage rats, stuff rags on which cayenne pepper has been sprinkled into their holes. They don't like it.

A ferret, loosened in a building infested with rats, will clean them out in a week or less. But look out for your chickens and small pets—the ferret will kill them, too, if

you don't watch out! Be sure to remove the ferret after he has done his work.

Cover the floor near rat holes with a thin layer of caustic potash. This makes their feet sore. They lick their feet, thus making their mouths sore. They then shun the place.

If rats refuse to enter traps or touch bait, pour a few drops of oil of rhodium on the cage top. This is said to attract them.

Mice

Mice do great damage to property, as well as being dirty little nuisances. Besides the ordinary boughten traps, there are some good homemade ones. Try this easily made mouse trap. Get a shingle, or small board, a bowl and a thimble filled with corn meal, dampened with soap or gravy. Place bowl upside down on board; under the bowl's edge put the filled thimble, so that the bowl's edge rests on the small end of the thimble, the open end facing the center of the bowl. The mouse will creep under to eat. The slightest movement causes the bowl to slip, securing the mouse. Mice that shun others will enter this trap.—[E. H., Mass.

Soap mixed with pepper to a paste is useful to stop up mice holes, or bits of cloth sprinkled freely with red pepper may be used.—[H. D., Mass.

Scatter any kind of mint over shelves and in closets. The mice will leave.—[V. R., Tex.

Gum camphor sprinkled around the haunts of mice will keep them away.—[M. H., S D.

Bore one-inch holes two inches deep in big blocks of wood. At bottom of holes place poison made by mixing 1 part arsenic with 5 parts sweetened corn meal. Place where the mice can reach the poison. The blocks should be burned when discarded.—[L. P., Vt.

Mix tartar emetic with any favorite food of mice. They eat it, become ill and die or leave.—[P. R., Tenn.

Moths, Beetles, "Silverfish"

The clothes moth is an insidious enemy to housewives. It rarely appears before May, and the "miller" seen then is the mother moth seeking a suitable place to deposit her eggs. It is the last flight she takes, as she dies soon after laying the eggs. Guided by instinct, the mother moth places its eggs where the larvæ may obtain suitable food, when hatched. She chooses the folds, creases, wrinkles and gathers of woolen garments, the seams of trousers, collars, folds and underarm spaces of coats and dresses, and has a special liking for dusty, dark and greasy places.

The eggs hatch in six days. The moth worm is whitish,

small, with a dark head. It has sharp jaws and it begins to eat as soon as it has built for itself a sort of coat out of the material on which it came to life. It usually eats path-like courses, but may cut straight through the goods. As it increases in size, it inserts a piece to broaden its jacket and lengthen it also. It is seldom found outside this case, in which it lives. The moth dislikes strong odors, but these do not kill moths. They merely, sometimes, repel them. All the moth balls procurable are useless if the eggs are in the house. The worms must be sought and destroyed.

Moth Remedies and Preventives

Scatter insect powder freely over, in and around trunks, boxes and floors. Puff it into closets and close tightly for several hours. Spread liberally everywhere and shake some over the clothing.—[R. P., Mass.

Saturate bits of sponge or blotting paper with turpentine. Place in trunks, drawers, between clothing, under rugs, in furs. It will not injure any garment and the odor evaporates in time.—[D. S., Ore.

To kill moths in carpets, take a coarse towel, wring out in clean water, spread it smoothly over the places where the moths are, and iron it dry with a hot, heavy iron. A tailor's goose is excellent. It will not harm the carpet and will kill the worms.—[E. K., Mass.

Take ¼ oz each of ground clove and caraway seed, 1 oz fine salt, ½ lb lavender flowers, and ½ oz each dried mint and thyme. Mix well; put in cambric or silk bags. These should be placed among clothing likely to be troubled with moths, and will help to keep them away.—[F. T., N D.

When laying woolen carpets, sprinkle the floor with turpentine and rub freely around the edges. Insect powder used in the same way kills the worms and helps to keep moths away.—[M. A. P., Ill.

If carpets become infested with moths, take them up. Beat well. Before relaying, mop the floor with hot water containing 1 tablesp carbolic acid to each gal water. After floor is dry, sprinkle powdered borax freely along edges of baseboards.—[L. M. H., Ill.

Moths can be driven from upholstered work by sprinkling it with benzine. The benzine is put in a small watering pot, such as is used in sprinkling house plants; it does not spot the most delicate fabric, and the unpleasant odor passes off in an hour or two in the air. Care must be used not to carry on this work near a fire or flame, as the vapor of benzine is very inflammable. If a little spirits of turpentine is added to the water with which floors are washed, it will prevent the ravages of moths.—[J. B., Kan.

Thoroughly wet the floor around the edge of the room with spirits of turpentine. Apply with a brush as you would paint. It kills the moth eggs under the base. Salt sprinkled freely about the edge and over the entire carpet, while sweeping, is also hard on moths.—[H. H., O.

To kill moths in carpets sprinkle floor thickly with tobacco near the edges of carpet. Put lots of it around mop-boards. [E. M. T., Kan.

When a house is closed for any time, pans of water left in the center of floors will catch moths and other insects. Evaporation can be prevented by spraying a thin coating of sweet oil over the surface.—[R. S., Vt.

To fumigate clothes for moths, shake out all clothing so that the fumes may enter them freely. Place either a sulphur candle or a cupful of sulphur on hot coals in an iron pan, standing on bricks in center of room. Close room tightly and do not open for several hours, when the moths will be dead.—[D. P., Me.

Beetles and Buffalo Bugs

At the risk of killing some innocent beetle, it is yet best to destroy all sorts found in the house, where they are superfluous. The latest discovered beetle was found in Buffalo, in 1872. Hence its name. The buffalo bug is tenacious of life, prefers wool, but will eat silk, carpets and books. The common species is covered on the back with tiny scales and has a stripe down the center, which widens along its path into three distinct spots. The young are very vigorous, voracious and present a hairy appearance, because usually covered with the fuzz of the material they are eating. The larvæ are especially fond of carpets, which they eat from the under side, thus often defying detection until the carpet is a ruin. It is often found in silk umbrellas and will spoil silk waists and coats in an incredibly short time. It has but one good point. It confines its depredations to the summer months, while its detested brother, the smooth, black beetle, works equally well in all seasons. The larvæ of this pest is light brown with a narrow body. When you bring flowers into the house, be careful that there are no buffalo bugs on them. They are often brought into houses in this way and are especially fond of tulips.—[B. P., Ct.

Silverfish

While not a beetle, these creatures may be exterminated by similar methods to those used for moths and beetles. It is popularly known as the "silverfish," or "fish moth," and "shiner." It is a smooth, slender insect, wingless and worm-

like, with two long antennæ on its head. It is found in old houses, in attics and closets, and has a good appetite for lace curtains, cotton shades, books, and all starched goods. It does its largest damage in houses closed for any length of time. They are especially susceptible to insect powder, which should be used freely around their haunts. The same remedies used for moths apply to all beetles and to silverfish, but must be more persistently applied, because they are so tenacious of life.

Get 5 cts worth of carbolic acid at the drug store. Put it in a sewing machine oil can, and run it along in all the cracks of the floor, and you will soon get rid of buffalo bugs. It does not stain.—[Mrs A. S., N J.

Mix 2 oz oil of red cedar with 1 qt turpentine. The turpentine cuts the oil so that it will not spot. Sprinkle in and around haunts of moths and beetles.—[C. B., N H.

If uncertain as to whether all moths have been destroyed or not, try hanging a strip of woolen goods in closets where their presence is suspected. Moths like red or white flannel, and when they enter it, it should be burned at once and the moth crusade resumed.—[P. K., Wis.

House Plant Pests

Housecleaning is as necessary in the care of plants as in the care of a house. Every faded leaf and flower should be carefully removed daily. The stands, pots and leaves should be kept clean and sweet, free from dust and dirt. Plants, to thrive, must have fresh air, sunshine and room to expand. An even warmth of about 60 degrees in the daytime, never lowering beyond 48 degrees at night, and this gradually, will carry all but the most delicate plants through the winter. Plants have their insect enemies, the principal ones being lice, red spiders and worms.

To kill plant lice shave ¼ lb pure, hard soap, and dissolve it in 1 pt hot water. Stir it into 4 gals water and spray on wash plants with it.—[E. E. R., Me.

Sprinkle a tablespoonful fine cut tobacco over infested plant and spray it with tepid water. Let the mixture soak into the earth around plants.—[R. P., Mass.

To rid plants of red spiders, frequent washing with tepid water is excellent, and also the use of lice remedies.

For worms in plant soil, dissolve a piece of fresh lime, size of a lemon, in 5 gals water. Saturate the soil freely with this mixture. Discard the sediment.—[R. O. D., N J.

Sprinkle fine cut smoking tobacco over the earth in pots. Pour clear water on this slowly, letting it drain down to the bottom of pots. Sometimes worms come to the top, again they die, and may be easily removed.—[M. C., Cal.

Spiders

The presence of spiders in a house indicates that flies are also there. There are few spiders in flyless homes. Such as remain may be readily removed with broom or brush, and if no food in way of insects is allowed in the house, they will not return.

Ants

However interesting ants may be to entomologists, to the housewife they are a pesky pest. The most common specie is the tiny red ant which infests pantries and kitchens in great numbers. These live in the house. They are domesticated. They have searching members who are constantly looking for supplies. When they find the food, carelessly or accidentally left in available places by housewives, they carry the news to their colony. The workers there sally forth to feed and forage, and soon the housekeeper finds her closets swarming with the insects. The large, black ant is an outdoor creature. Their nests will be found under stones and in holes and must be destroyed to afford permanent relief. Black ants have a strong appetite for sweets, and some form of sugar makes a good bait for them.

Whenever possible, trace these insects to headquarters. Find their nest. It may be in the house or in the ground. Saturate it with kerosene, or boiling water, or use strong tobacco water. If in the ground, drop some quicklime in the mouth of the nest and wash it down with hot water. Ants dislike strong scents. Try sprinkling infested spots with oil of pennyroyal. Scatter powdered clove or camphor around their haunts. The odor of tar, wormwood leaves, or tansy, will often scatter them. So will oil of sassafras and raw, sliced onions. Oil of cedar poured on cotton batting and placed where ants congregate is a simple remedy and the same may be said of the use of green cracked walnuts, similarly placed.

Sprinkle a sponge with sugar. Lay it on the shelf ants frequent. Next day plunge it in boiling water to kill the ants it has collected, and then set it again.—[E. T., N Y.

Cover plates with a thin coat of lard. Set them in infested spots. Place bits of wood at the sides for the ants to climb up on. When full of insects drop them in a pan of boiling water.—[E. P., Mass.

A few drops of paregoric in sweetened water will attract and kill ants. Put it in a shallow dish.—[M. T. R., O.

Ants dislike sulphur. Put small bags of it in infested places, or with bellows puff it into cracks and crevices. Also scatter it on closet shelves.—[B. E., Wis.

Equal parts of borax and sugar will scatter and kill ants. [M. B. A., N H.

Boil 1 lb alum in 2 qts water. Apply with a brush or swab to all places where ants congregate.—[E. K., Mass.

Cut small squares of wood from an old cigar box. Cut sticky fly paper same size and tack on the wood. Put a completed "trap" under each leg of table or infested ice box, to keep the ants from crawling up.—[A. G., Mass.

Make rings of borax and plaster of paris around each leg of table or ice chest. The ants will not pass it. If they eat it, they will die.—[E. P., Mass.

Fill 4 tin cups half full of a solution of carbolic acid and water or kerosene oil. Set each leg of table or chest in a cup Ants climbing will be killed.—[A. A., Ga.

An oz of oil of sassafras applied with a cloth to every spot infested by ants will exterminate them. Pour a little down the cracks of the floor.—[G. B. S., Mass.

Mix equal parts of carbolic acid and water. Apply with brush to edges of shelves, legs of tables, corners of rooms and wherever ants are found. It will scatter them.—[E. P., Mass.

Lice

The most cleanly kept child may contract lice. An adult is also in more or less danger of an assault from these creatures, as they travel rapidly from the unclean body to the clean one, and multiply so secretly and so swiftly that one's head is infested before the presence of the pest is suspected. Care and the use of simple remedies will soon rid one of the small torments.

Cocculus Indicus is an inodorous, almost tasteless berry found in India, and imported here for medical uses. It can be procured at most druggists' for use in the formulas appended. If the fruit is not obtainable, a tincture may be substituted. Cocculus Indicus is a poison. A decoction containing it should be properly labeled and kept from reach of children.

One of the most effectual remedies for vermin in the hair is Cocculus Indicus. It is poisonous when taken internally. Have the druggist fill a pint bottle half full of the berries and then fill up with whiskey. Moisten the scalp thoroughly at night, and in the morning wash the hair in tepid water. This will kill both lice and nits; it will not harm the hair, and two or three applications are enough.—[F. E. F., O.

Alcohol and coal oil are a standard remedy. Mix in equal quantities and apply freely, being careful not to get any in the patient's eyes. Follow by a pure soap shampoo the next day, and rinse thoroughly.—[P. T., Ore.

Comb the hair with a fine-tooth comb. This removes adult vermin. Apply lard or vaseline to roots of hair and scalp. Repeat in a day, comb again, and wash with soap and water in equal parts.—[Edith P., Mass.

Dissolve in ½ pt alcohol as much gum camphor as it will take up. Rub this mixture well into the roots of hair and over scalp, wetting the hair, if long. Comb out with fine-tooth comb. Repeat if necessary.—[T. K., Mass.

Use a good shampoo of soap and water, rinse thoroughly, then apply a mixture, obtainable at drug store, of 2½ grs bichloride mercury and 1 oz aromatic acetic acid.—[O. R., La.

After an application which kills the vermin and eggs, comb well, wash out all remaining ointments, and finally wash with equal parts vinegar and water. This removes clinging nits.—[J. T., Ill.

Two oz tincture of larkspur, procured at a drug store, will usually permit of two applications. Rub well into scalp with fingers and leave on over night. Then wash the head and apply a second time, if necessary.—[A. F., Mass.

Mix 2 oz powdered sulphur with 1 cup lard. Rub with fingers well over scalp. Let it remain several hours. Comb out first, then wash with warm soap and water, and rinse thoroughly.—[E. W., Mass.

It is often hard to remove tiny lice with a comb. Rub vaseline, lard or grease of any kind on the comb. They stick to it and are then easily removed.—[B. L., Va.

Slugs and Snails

These are, naturally, out-of-door pests, but are sometimes found in cellars and kitchens. Being slow of movement, they are easily caught and removed. They dislike salt and quicklime or chlorate of lime, and avoid spots sprinkled well with either powder. Once removed, applications of this will keep them away. Dryness and light are also disliked by them. If the cellars and kitchens are kept dry and well ventilated and lighted, they seldom infest them.

To Protect Fruit from Birds

Take some brown thread, fasten the end of it to one of the twigs of the tree or bush, and then cross the thread backward from twig to twig in a dozen different directions and fasten. The birds will come boldly to settle on the trees, and when they strike these to them invisible snares, they will fly off in a terrible hurry, not to return again to that particular tree or bush.

For Additional Memoranda.

The Care of Pets

How to Maintain Health and Cure Sickness

THE law to be regarded in our guardianship of the brute creation is, emphatically, the law of love. This does not mean weak dealing with them. A firm discipline, producing excellent results, may be so tempered with kindly consideration that the animals will respond and obey with pleasure and alacrity. They will like to obey, because they instinctively recognize the justice of their masters. Animals usually possess a like character with their owners, especially when they have been in one master's care all their lives. The gentle master will own gentle animals that will love to work for him. The other possesses animals that grudgingly respond to all his orders because they have to. If only for selfish reasons, kindness to animals should be always practiced. The efficacy of the soothing touch and word to a frightened or stubborn beast has only to be tried to be appreciated. A pleasant word, an encouraging caress, bring forth better results, in the long run, than are ever reached by the harsh command and the stinging blow. It pays to be kind. The dumb creatures are placed in our hands to minister to our comfort and our pleasure and the least we can render in return is to treat them wisely, lovingly and tactfully. Often wrong treatment is given through ignorance of their needs and how to meet them. That is a situation easily remedied, especially in the case of house animals or pets of any kind. It is hoped that the following paragraphs will be found helpful as well as interesting.

DOGS

The dog is man's most faithful ally, servant and friend. He is almost the only animal which, besides giving to his owner loyal and useful service, unites with this a loving attachment, and sincere affection, deep and true. Proverbially ungrateful as man is, he cannot, usually, help returning some fraction of this wealth of love, and therefore man and dog are often comrades, rather than master and servant.

The Care of Dogs

Cleanliness is essential. Short haired dogs do not need washing very often, and when it is done, a pure, non-irritant soap and tepid water should be used. A comb and brush give a good, dry cleaning and can be used profitably several times a week. Long-haired dogs, especially house pets, such as poodles, terriers and the like, need bathing often. Such dogs, left unwashed, often contract disagreeable odors and become alive with fleas. Every vestige of soap should be removed or the dog will be uncomfortable and refuse to lick himself. A robust dog often enjoys and is better for a plunge and swim, but no dog should be thrown into a pond or pool, if he evinces a dislike for it. It destroys his spirit.

The dog needs a clean and comfortable bed and kennel. The latter should be dry and warm, in a sheltered situation and raised a little from the ground, to insure dryness. Dampness is dangerous to his health. If the dog is chained, be sure to give him shade, into which he may retire when he chooses. Unless absolutely necessary, do not chain a dog at all. The happiest dog and the healthiest is the one who runs at large, exercising his muscles, enjoying to the full his short life. If he must be fastened, to give him certain daily exercise is a moral obligation, and no dog will live long or happily without seasons of such freedom. Also, he must have grass to eat when he wants it.

Plenty of pure, cool water is a necessity. It is cruel to overfeed a dog. Equally so to underfeed him. Either extreme must be avoided. Young puppies need more than adult dogs. They should be fed six times daily, reducing gradually the number of meals as the puppy grows. They may be given bread and milk, boiled rice and milk, oatmeal porridge, boiled dog biscuit, and lamb broth in which bread or rice is soaked. The adult dog should have a regular time for feeding. Don't expect him to forage for himself. Don't limit his diet to chance scraps, although these, from his master's table, may be given him at a regular mealtime, with other food. Once a day is often enough to feed a dog—preferably in the morning, or at noon, if he is a watch dog. Give all he will eat

with relish, but do not leave food around for him to return to, or he will overeat. Don't give raw meat to a dog. It makes him cross and causes disagreeable odors. Don't give a dog warm, burnt, smoked or tainted food. He may occasionally have cold, coarse, boiled meat, otherwise dog biscuit, crackers, bread, table scraps, and he will delight in a good bone. Gnawing a bone keeps a dog's teeth in order.

Fleas are a source of misery to a dog. They should be exterminated. A small dog may be given an insect powder bath, by placing him in a bag with a cupful of insect powder. Tie the bag around his neck so that it will not choke him, and let his head protrude. He will tumble around and thoroughly dust himself. Kerosene oil can be safely rubbed into a dog's coat and will kill vermin, but makes the dog smell bad for a while. To wet the dog down with clear, tepid water and comb out the fleas is as good a way as any to get rid of them. After the dog's body is free of the pests, cleanse the kennel. Sluice it with boiling water and spray with disinfectant. The odor will soon evaporate.

How to Administer Medicine to Dogs

If it is a liquid, stand in front of the dog and pull away the skin of the cheek from the teeth, making a natural funnel, through which pour medicine. Don't let him shake his head before swallowing. Have someone hold the dog if it is necessary. Don't force his mouth open. It is unnecessary. If the dog is large or hard to manage, let a helper sit down and take the dog between his legs, holding him with knees and keeping the dog's head up with his hands. Give pills and powders by forcing the mouth open and dropping them far back in the mouth. Or, wrap the stuff in a piece of meat. Give the patient two or three pieces first, and then follow with the doctored bit.

Diseases of Dogs

The sick dog needs, first, care and quiet. He should be given a cool, quiet and comfortable place, and all symptoms should be carefully noted. When the disease is decided, treat him according to directions given, and be gentle and firm in all actions.

Indigestion

From this disease arise many ills. It is the primal cause of other complaints, and should never be neglected. Its principal symptom is a dislike for natural, wholesome food, and a craving for sweetened and spiced kinds, with an abnormal appe-

tite for trash, such as paper, wood, strings and cloth. Diet the dog on plain food in small quantities. The trouble is caused by overeating or improper food.

Distemper

Distemper is characterized by a discharge from nose and eyes, great lassitude, disinclination to play, exercise or move, loss of appetite, fever, a short, dry cough, sneezing and low spirits; the bowels are always deranged, sometimes relaxed, again constipated; the urine is scanty and high-colored, and a dangerous symptom is the swift loss of flesh. The disease lasts six weeks, sometimes longer, and is often followed by complications, as in scarlet fever among human beings. Feed good, strengthening beef tea, fresh milk, mutton and lamb broth, oatmeal porridge, and allow plenty of clear, cold water. All broths must be skimmed of all fat and every bit of food be cold. A tonic pill to be given three times daily for a week in any stage of the disease is: Two scruples disulphate quinine, 2 scruples sulphate of iron, 4 drams extract of gentian, and 1 oz powdered quassia. Mix into 15 pills. For the catarrh, blow powdered sulphur into the animal's nostrils, by means of a quill, or have the animal inhale fumes of burning sulphur for five minutes each day.

Worms

Worms cause offensive breath, uncertain appetite, diarrhea, fever, fits and an annoying itching, to cure which the dog often drags himself on the ground. Any worm cure used for children is good for dogs. An adult dog must not have food for 24 hours after giving the medicine, and should then, before feeding, be given a wine glass of olive oil, to cause evacuation of worms. Then feed lightly. Allow water.

Rheumatism

The exposure of a dog to cold and wet or a damp kennel brings on this distressing complaint. He may have rheumatic fever, even. In this, the dog shrinks from every touch, however kindly. He will have a low fever and retire to some dark corner, if he can find one. Don't pat or stroke him. It causes anguish. Speak gently and don't be angry if he snaps and snarls. He is not responsible while in torture. He is constipated and the urine is scanty and high-colored. If he is fat and gross, a slight bleeding by clipping of the ear may help. Otherwise, try a dose of physic—castor oil or tincture of rhubarb. A strong, large dog may have 2 tablespoonfuls, a small dog, half the quantity. Keep the dog in

a dry, warm place. Much the same treatment may be used for any form of rheumatism, with the addition of local application of this liniment: Mix ½ oz each of spirit of turpentine, liquor of ammonia, and laudanum. Shake well and rub in on affected parts. Don't urge exercise. Let the dog rest.

Fits

Don't mistake fits for hydrophobia and kill the victim. The dog is usually seized suddenly with fits, while hydrophobia gives a long warning of its approach. In fits, the creature suddenly halts, looks around dazedly, and then drops on its side, emitting a peculiar cry. His limbs become rigid, then relax; he kicks and twitches violently, and foam falls from his mouth. He needs care, but must be handled gingerly, as he will snap. As soon as he is able to stand, he runs home, often snapping at persons in his path. He should be kept in a quiet place, given little to eat and plenty to drink. Sometimes slightly bleeding the dog by making ¼-inch cuts in the tips of his ears, and bathing the cuts with warm water, will afford relief. Use sharp, pointed scissors, and wear gloves.

Diseases of Mouth or Teeth

Some dogs loose their teeth early and suffer from spongy gums and tartar collections. The dog seems cross and snappish and is made so by suffering. Examine the dog's teeth occasionally. If any are decayed, extract them, or have it done by a veterinary. Wash the mouth occasionally with a lotion composed of two parts tincture of myrrh and 6 parts water. Don't neglect this. Sometimes canker or watery swellings appear in mouth or under tongue. Lance the swellings and use the lotion for both these ailments or any kind of mouth sore.

Paralysis

This is a result of overfeeding. The dog flounders around, dragging his hind parts, which seem benumbed. Administer a cathartic pill or a tablespoon of castor oil on alternate days for 8 days, and diet the sufferer. A full-grown dog need only be fed a reasonably good meal once a day. He should have bones occasionally and clean water at all times.

Hydrophobia

It is said that this terrible disease is never spontaneous, but must be communicated from one animal to another. If one is positive that his dog has no bite or scratch, even the

tiniest, from any other dog, it is reasonably sure he has not this disease, even if he has some of its symptoms. Yet the symptoms are so clear that anyone may know the complaint, and it must be remembered that the slightest hidden scratch may mean innoculation.

The dog with hydrophobia is ill long before the crisis of the disease. He is snappish, cross and changed from his ordinary self. He seeks solitude. The sun troubles him. It makes his head ache. To ease pain he finds dark holes and corners, and stays in them during the early stages of the trouble. His appetite changes; he craves unnatural substances, and, in an attempt to ease the torture of his burning, inflamed stomach, he eats all sorts of things—tar, stones, shavings, dung, hair and straw. Then comes a restlessness only stilled, temporarily, by travel. He takes long journeys, moving in a slouching half trot. His air is dejected, his eyes dull, his parched tongue hangs from his mouth, from which, contrary to the popular idea, there drops no foam. His course is crooked. At times he cannot see. He does not go out of his course to bite—indeed, he would gladly pass, unmolested and unmolesting, if he could. But he is very sick. A deadly disease grasps him. He bites at anything in his way, just as a man, gripped with a terrible, torturing illness, might strike at opposing forces. If not slain while on such a jaunt, he will return home. Thirst increases as the disease develops. He craves water, longs for it, but cannot swallow. Then he has spasms of rage. His suffering is pitiable. He knows nothing, recognizes no one. He tears to pieces everything within reach. The noise he makes in this final stage is unmistakable. It starts as a bark, changing to a short, stifled howl, and soon relief comes in a merciful death.

The disease is incurable. As soon as it is correctly diagnosed, kill the dog in some humane manner. Chloroform on a sponge at the end of a stick may be used, or a good marksman can send a merciful bullet into the creature's brain.

For Mange

A soap made purposely for this disease may be bought at druggists'. The kennel should be disinfected by burning sulphur in it. Change bedding frequently and keep the kennel warm, dry and well ventilated.

For Sore Eyes, Ears or Mouth

Wash eyes with boracic acid solution, one teaspoon to four of water. Use also in mouth or ears. For sore ears and mouth, use alum water as a wash, one teaspoon powdered alum to six of water.

Poison

Give an emetic as soon as possible. A generous dose of lukewarm, slightly salted water will do; a good dose of sweet oil or melted lard is better. If the nature of the poison can be ascertained, the same antidote can be used that would be given a person, remembering the general rule that alkalies neutralize acids, and vice-versa. As a general rule, where no knowledge of the nature of the poison is known, milk may be administered and followed by raw eggs. After such a trouble the dog needs rest and quiet.

Pointers

Remember, the dog who has real hydrophobia does drink, or try to. He is wild for water, but often cannot swallow.

It is not the mad dog that froths at the mouth. It is the dog in a fit.

The dog that is often beaten becomes a cringing brute. His slinking ways tell what kind of a master he has.

If you swear at your dog, don't be surprised if he snaps or growls at you. That's his only way of talking back.

Never let an animal suffer for want of fresh, clear water.

Love me, love my dog.

"The more I see of dogs and mankind, the better I love dogs."

CATS

The cat is emphatically man's most domestic animal. The fireplace which lacks a purring pussy reposing peacefully thereon seems strangely bereft. Whatever may be said of the cat's admitted independence, it cannot be denied that she is intelligent, pretty and reciprocates human affection. Famous characters in ages past, by the scores, have owned and loved cats. Coming down to modern days it may interest some to learn that the government at Washington carries on its pay roll over 1000 cats that are cared for because they guard mail matter from rats and mice. At a recent cat show in New York city, two cats, valued at $1000 each, were exhibited. The trade in well-bred cats is increasing yearly.

Care of the Cat

The cat is the cleanest and daintiest of animals, and its assiduous attempts at cleanliness should induce every owner of such animals to provide them with clean food, clean

dishes to eat from, and clean beds to sleep on. They need food at least twice a day, morning and evening. A small midday meal will not harm them, if of proper material. For breakfast, bread and milk; for dinner, a small dish of meat, and at night, bread or oatmeal and milk, with perhaps a little meat. They should have fresh fish once in a while, and are very fond of liver and kidneys, which are good for them. Raw meat will not harm them, if it is perfectly sweet and is not fed too often or in too large pieces or quantities. Cats are often fond of vegetables. They may be allowed to eat in moderation of any kind they like. Fresh water should be always accessible, and they need much milk.

One of nature's aids to digestion is grass, which every cat craves and which is necessary for their health. Catnip, dried or green, is a strong-scented perennial plant with medicinal properties. Cats love it and eat and roll on it with mad delight. Some should be given them often as a tonic, and to make them happy. The cat responds to kind treatment and loving care in a high degree. It becomes, under harsh and unkind rule, a timid, wild, shrinking creature, slinking along as if fearing a blow, and betraying in every movement that it is an abused animal. It needs considerate treatment, and under it is a beautiful, affectionate companion. Hungry or starved cats do not make good mousers. They are then too restless and miserable to watch patiently for mice, as well-fed cats will.

To Give a Cat Medicine

Put the cat in a bag with drawing strings. Tie loosely around the neck, leaving head out. Take the cat between your knees, or have some one hold it. Procure stout gloves to protect your hands. Open its mouth and lay a meat skewer or penholder across its jaws just beyond the eye teeth. Pour the medicine down the cat's throat. Give no more than can be easily swallowed, then remove the stick and hold head up until pussy swallows. Wipe off any smears, as the cat will not, and is thus made miserable. This will frighten the cat and must be as gently done as possible. Do not feed for at least two hours.

Disease Remedies—Fits

A terrifying trouble is this one. The cat rushes here and there wildly, with staring eyes and upright fur, finally seeking refuge in some dark corner. These fits rarely bother the adult cat. They are caused by worms, indigestion, blows or overheating the brain. Another kind of fit is that which resembles an apoplectic attack. The cat, usually adult, does

not run, but falls over, is in apparent distress, and becomes more or less unconscious. In either case, a method which gives relief is to slightly slit one or both of the cat's ears in its thinnest part. The slit should be done with sharp, pointed scissors and should not be over ¼ inch in length. A few drops of blood ensue and the cat is thus relieved. The running fits cease as the cat grows older. Particular care to diet should be given, and if worms are suspected, give ½ teasp castor oil.

Diarrhea

The victim loses flesh, is untidy and dull-eyed. Give 1 oz fresh mutton suet melted in ¼ pt hot, new milk. If the cat will not lap it, put 1 or 2 spoonfuls in its mouth every two hours. In severe cases of long standing give a spoonful of chalk mixture, procurable at any drug store, with 8 drops of tincture of rhubarb in it, three times a day. Once a day, give 2 drops laudanum.

When Cats Are Poisoned

The same general rules given for dogs may be followed for cats. A general tonic after such an experience is flour of sulphur mixed with lard—1 part sulphur to 3 of lard. Smear it on the cat's paws. She will lick it off at her leisure.

Cold and Catarrh

Cats are very sensitive to dampness and cold, running, if neglected, into bronchitis, and even pneumonia is not unknown. When the cat neglects its toilet, refuses food or seems torpid, it is probably a cold. Administer a teaspoon castor oil, and give it a warm, secluded, dry bed. Use sulphur and lard, mixed in equal parts, for catarrhal cold. Let the cat lick it off her paws. Feed her warm milk often, and in severe cases give her pure cod liver oil, until recovered.

Sores in Ears

When a cat jumps up from sleep, shakes its head and digs at its ears with its paws, it probably has sores in its ears. Pour a little diluted hydrogen peroxide down them, or inject it from an eyedropper. There is a mite which burrows to the ear drum and makes pussy deaf. To avoid this, wash ears often with borax water.

Hair Balls in Stomach

The cat is often made ill or killed by the collection of hair in its stomach. It swallows this while licking itself, and

when it remains undigested it gathers in balls or rolls, and causes illness. The cat should be given all the grass it chooses to eat, as this causes an ejection of the plague. Long-haired cats are especially liable to this trouble. Plant grass seed in boxes, for the winter, or let the cat eat from "umbrella plants."

Cat Lore

Petrarch had his favorite cat embalmed and kept it in a niche in his room.

Cardinal Wolsey's pet cat sat beside him while he held converse with princes.

Remember Dick Whittington, whose cat made him mayor of London?

The cat inclines to C's. It loves Cleanliness, Care and Comfort.

CANARIES

The first consideration is the cage. It should be roomy, simple in construction, and easily cleaned. Have several perches of plain, unvarnished wood, of varied thicknesses. Have a small swing at the top of cage. If the bird scatters his seed, make a cover of thin gauze. Gather fullness below to a center and tie with ribbon. Empty when desirable.

The location of the cage is worth thought. Draughts, over-heating and chilliness are all to be guarded against. In warm weather, near a high, sunny window, where plenty of fresh, cool air blows about the bird, is an ideal place. In cold weather, a canary should not be near windows, where drafts are always present. But it needs sunshine and should have it, furnishing some shade in the cage for it to retire to when it wishes. Remember that in winter the air near the ceiling is often very hot, and do not hang the bird too high. If it is kept too warm, it will droop, molt and die. An even temperature should be maintained. It should not be over 70 degrees. If there is any danger of a sudden drop after the bird is left for the night, cover the cage with some warm material, leaving an air hole open on one side. Next comes the care of the cage. Absolute cleanliness must rule. The cage should be cleansed every day. Twice a week dip the perches in boiling water, to kill any possible vermin. Lice will sometimes cling to the inside roof of the cage. Look for them daily, as they increase swiftly.

Every morning permit a bath in a sunny situation, free from draft and disturbance. Strew bottom of cage with fine

gravel or sand. It is necessary to the bird's health. Give fresh water daily, twice a day in summer. Canaries need abundant and good food. A mixture of summer rape and canary seed is the best. It comes from Germany. If it cannot be obtained, a fair substitute is the prepared food always to be found in packages at all provision stores. Give fresh seed every morning, removing shells of that used previously. Birds need a variety of food besides this, which is their natural nutriment. Chickweed, fresh lettuce leaves, plantain leaves and seeds, a bit of tender cabbage now and then, will be relished. Avoid acid fruits, but give a piece of sweet apple or pear occasionally. While the bird needs a varied and generous diet, he must not be overfed and allowed to grow too fat. Observe the effect of his food, and regulate the bill of fare accordingly. A fertile cause of illness is poor or stale seed. If the bird droops, try seed from some other locality, and note its effect before giving medicine. Poor, stale or musty food causes disease.

Remember, a bird's day is from sunrise to sunset, and it is best to see that there is some food left in his cage at night. A few hours' wait in the morning harms a bird. It should find food as early as it desires it for his breakfast. Attend also carefully to the water cups. The canary often scatters his water and it should be carefully replenished. See that at night there is enough for him to use until you arise. He is an early bird.

A paste, good for young as well as old birds, is made by bruising with rolling pin a pint of rape seed, blowing away husks, and adding slices of dried bread. Reduce both to powder and mix. Make a small quantity daily into paste with a few drops of water, and add a spoonful of hard yolk of egg. Give this to young birds. Feed dry to old ones. The powder spoils in a week. It should not be kept longer.

Molting

This is a trying season for both bird and owner. The canary needs much care and a generous diet to help him safely through. Constant watchfulness must be exercised to prevent the taking of colds. If the feathers do not readily come through, a slight application of warm castor oil by the fingers may improve matters. Feed generously. Do not expect the bird to sing or be sprightly. Place a rusty nail in his drinking cup. Sometimes a little fat salt pork is relished, or a lump of sugar, or some red pepper mixed with hard-boiled egg, chopped fine.

Asthma

This is a common disease. The birds breathe shortly, open their beaks in a gasping way, and evince distress for breath. It is easily distinguished. It is caused by bad air, bad food, and sometimes by fright, which causes a sudden loss of breath or rupture of some tiny blood vessel in lungs. To cure, give plenty of fresh air, avoiding drafts. Change the food. A paste which has proven efficacious is made by boiling a piece of white bread, size of an egg, in a cup of fresh milk, stirring it with a wooden spoon until it is of the consistency of pulp. In violent attacks, feed this paste two days. For slight attacks, give the paste once in three days. Allow no hemp seed. Use rape seed entirely, and be sure it is fresh and wholesome. Give some green food, lettuce or watercress, or chickweed. With general good care the bird will recover.

Atrophy or Wasting Away

The bird's digestion is troubled here, either by overfeeding or unnatural or poor food. He disgorges, ruffles his feathers, becomes slovenly and thin. Often the bird has an abnormally great appetite. Green food is a remedy. Give it liberally. Be sure its usual food is pure, and decrease it until the bird is cured. Put a rusty nail in the drinking water.

Constipation

The symptoms are uneasiness and unsuccessful attempts at relief. Give 3 drops castor oil in teaspoon sweetened water. Repeat, with larger dose, if ineffective. Green food is desirable, and anointing the vent with sweet oil relieves suffering caused by straining.

Diarrhea

Change of food, overeating, and impure food causes this disease. Boiled bread and milk is a good food to try in such cases. Mix ½ teasp powdered chalk, ½ teasp ground rhubarb, and ½ teasp ground ginger. Mix it with seed and feed. A teasp chalybeate water, mixed with 6 teasp warm milk may be used as a drink. It has been known to cure advanced chronic cases.

Pip

This is a catarrhal complaint. The nostrils become stopped up and the membrane of tongue is hardened by inflammation. retarding appetite and hurting digestion, since no saliva can

flow. At times an ulcer forms in mouth or throat. The symptoms are a ruffing of head feathers, a dry tongue, the beak held open and often yellow at the base, eyes red and watery, and general indications of a cold. Give a few drops of sweet oil in light cases. This relieves dryness of throat and keeps bowels open. Keep bird warm, but give fresh air in plenty. If an ulcer forms and can be reached, prick it, when ripe, with a needle sterilized by holding its point for a few seconds in a hot flame, then bathe gently with warm water, being careful not to frighten the patient. Use soothing words and gentle handling. Mix together a pinch of pepper, ½ teasp butter, and a pinch of sugar, and administer at frequent intervals.

Baldness

Some birds, for no apparent reason, become bald. Wash the head with a solution of salt and water, 1 teasp salt to a cup water, less salt if the head is tender or inflamed. After applying, rub softly with fresh lard.

Huskiness

Give boiled milk to drink in place of water for a few days, then feed twice a day with finely scraped beef mixed to a thick paste with water and hard-boiled chopped yolk of an egg.

Loss of Voice

Make some gum water by dissolving 1 ounce gum arabic, procurable at all drug stores, in a cup of hot water, adding ½ teasp paregoric, and administer twice a day for two or three days, using ¼ teasp at a dose. Give much green food.

Choking

Birds sometimes swallow foreign substances which stick in their throats. If a bird is noticed shaking its head and opening its bill distressedly, examine throat at once. The article can usually be extracted with a hairpin, by skill and careful handling.

Lice on Canaries

The canary has no deadlier enemy than this parasite. Even if none is discovered on the bird, they may be in the cage. If the pet is seen in an excited state, unhappy, plucking at

his body, his feathers awry, suspect lice. Search for them. Perhaps they are up in a corner of the cage roof. If you see a bit of reddish rusty looking stuff up there anywhere, it is lice. Get rid of them at once, for the comfort and welfare of the bird. Nothing is more injurious to his health. Hold a lighted candle under the red mass, and after extermination, cleanse cage thoroughly with hot soapsuds. Let the bird bathe frequently, and examine and remove any vermin found.

Chirps

Don't keep seed where mice can get at them. Birds will not eat seeds mice have been among, unless nearly starved.

Don't think the bird is dead if it faints. Canaries faint just as human beings do, and often for similar causes. Sprinkle with water and give fresh air.

If birdie refuses his seed and scatters it beyond reason, try some other. He may know that it is poor and be trying to tell you so.

An occasional lump of pure white sugar, a cuttle bone, an apple core, make birds sing hallelujahs!

In cleaning cages, why not have two, so as to disturb the bird as little as possible during housecleaning. The male canary, especially, shares with the human male his antipathy to housecleaning.

Canaries show a great preference for women, and for that woman whose voice is sweetest and gentlest. You want the birds to love you. It is easily in your power.

Never frighten a bird. They have been known to die of fright, a rude and sudden seizure, or a loud noise.

PARROTS

A parrot's first need is a strong, roomy cage. It is a mischievous and destructive bird. If it finds a weak place in its prison, it will work at it with claws and beak until it has broken it. Parrots, being tropical birds, must be kept warm and away from drafts. A large proportion of parrots die of asthma, contracted because of drafty surroundings. They need fresh air, pure water, good food, sunshine and kindly treatment. A pan of gravel is indispensable. Give water for bath once a week, and in summer if the bird will not bathe, sprinkle tepid water over him. Then dry him in sun or before a fire. Cages must be kept dry and clean.

Parrots have varying tastes in food, but one rule must be observed. Meat is harmful. Feed none. Butter and greasy foods are objectionable. Ripe fruits, nuts, crackers, crusts

of bread or toast, canary seed, bits of dry, mealy potatoes, dry breakfast foods, such as shredded wheat and like grains, are allowable in moderation. A little white bread soaked in fresh milk with a sprinkle of sugar may be given every day. With good care these birds live to a very old age, and are both amusing and affectionate creatures. The cage should be covered every night with a woolen blanket, allowing an opening for air.

To Teach Parrots to Talk

Speak to him at night, just as you cover his cage, repeating, in same tone, the sentence you wish him to say. Some day, usually unexpectedly, he will repeat the desired phrase exactly, tone and words, as he heard it. Reward him at once with any dainty he is fond of. Continue this method. Some parrots never venture original sentiments, others soon understand and make remarks of their own inventing.

Plucking Out Feathers

Search first for lice. Remove them and clean cage, if any are found. Dust the bird's body well with insect powder. If there are no lice, an inflammatory condition of blood, causing itching, may be the cause. Gradually decrease dainties, which may have overheated its blood. The bird may be too closely kept. Try diverting its attention. Give it spools and bits of wood to bite. Smear its plumage with a tincture of bitter aloes.

Dysentery

Keep the bird warm; feed it a soda cracker soaked in brandy and sprinkled with cayenne pepper. In a severe case, try 3 drops paregoric in a teaspoon boiled milk. Repeat in three hours.

Fits

Pour cold water over the parrot and put a few drops in the mouth. As soon as it revives, wrap it in warm flannel and dry. If the water does not revive it, cut a claw till it bleeds, or pluck one tail feather. A "fitty" bird should, once a week, have 10 drops spirits niter placed in its drinking cup. If constipated, give 3 drops castor oil.

Asthma

The symptoms are short breath, distressed breathing and gaping. Give moist, warm food. When very ill make a stiff

paste of boiling milk and wheat flour, and give no other food for three days. Should these prove ineffective, a remedy should be procured of some good bird dealer.

PIGEONS

The pigeon is the earliest domestic bird recorded in history. There are innumerable varieties, including that marvel known as the carrier pigeon, and their breeding may be profitably undertaken by young people or anyone who loves such occupation. They have all sorts of names—Pouters, Croppers, Runts, Dragoons, Horsemen, Shakers, Nuns, Fantails, Jacobins, and many more. All pigeon houses should be erected in somewhat sheltered positions, near, if possible, a stream of good water. In addition, drinking water in vessels should be nigh. Once in two weeks give some salt and keep old mortar and grit and oyster shell near all the time.

A stable loft makes a good pigeon house, apertures being made for their egress, and nests prepared. Pigeon houses may be made in a circular form and placed on tall posts, so that rats and cats cannot enter. The inside of all nests and all woodwork should be frequently cleaned, and whitewashed when possible.

Pigeons will eat any kind of grain or seed, but a varied diet is best. Beans, peas, barley and wheat are good. Pigeons at large forage for themselves, but even with them it is well to feed once a day, at night, to get them into the habit of returning at a certain hour.

Vermin cause much illness. Pigeons so afflicted mope, refuse food and lose flesh. First cleanse their houses and nests. Their feathers may be fumigated with tobacco smoke, being careful not to use too much, or each one can be well rubbed with insect powder.

When pigeons quarrel, wounds result which often canker where feathers are torn away. Rub such places daily with an ointment of burnt alum and honey, in equal parts.

Pigeons catch cold and cough. Give 2 or 3 peppercorns every other day. They should always be kept warm and dry. Lack of such conditions often means defective molting.

The Carrier Pigeon

The carrier pigeon is larger and has strong pectoral mus**cles. Its love** of home is the instinct which makes it valu-

able as a messenger. A bird unable to find its way home from any distant point is worthless. Carriers find their way home when 1000 miles from it, easily. While not as useful nowadays as in more primitive ones, they are yet useful in emergencies, where more modern methods of communication break down or fail to meet conditions.

GOLD AND SILVER FISH

The average length of life of these ornamental fish is ten to twelve years. They may be kept in glass bowls or globes, and if young and healthy when procured, will live that length of time by the observance of a few rules and regulations.

Allow one fish to each quart water. Use the same kind of water all the time. Choose the supply and use it constantly. Change water every day and frequently wipe the globe to remove any slime or dirt. Use deep vessels with clean pebbles at bottom.

Keep them where there is light and air, but not in the sun. The fish should be nearly of a size, else the larger ones may kill the smaller.

Use a small net when removing them to change the water.

Diseased gold fish will come to the top of water for air and often make a clicking noise. They should be removed to a separate bowl.

Don't shake the globe violently. These fish are susceptible to noise and it might kill them.

A prepared wafer is sold by dealers, which suits them better than any other food. If they cannot be obtained, a teaspoonful of very small, dried bread crumbs given once a day to every ten fish is sufficient. They find sustenance in the water. If the water ever looks turbid, change it immediately.

WHITE RATS AND MICE

White rats are interesting and affectionate animals. They are pretty and playful, very dainty in choice of food and in methods of eating it. They are capable of learning to do various tricks when kindly treated. It is said that other species of rats refuse to enter houses where white rats are kept as pets. Boys are especially fond of these rodents, and when affectionately treated, the little white creatures seem to love their young masters. They are fond of bread, cheese, crackers and bacon. They need a certain amount of liberty each day, for exercise, and a warm bed in cold weather, with plenty of good food, fed regularly and fresh water to drink.

The white mice are merely freaks; the albinos of the ordinary species. They are fond of music, and singing mice are not unknown. Their vocal efforts vary from low notes to high, acute ones, resembling, at times, the swallow's song. Mice need cages with sleeping nests. Constant care is needed to keep their cages clean, and cleanliness is necessary to their health. Strew sand over the floor; remove daily, and renew with clean sand.

For food, dip stale bread in milk and squeeze nearly dry. Also give crusts of dried bread to nibble, and as a tid-bit, now and then a scrap of cheese. Peas and beans are allowable, but never meat. Allow some liberty each day. They thrive better if permitted a ramble around a closed room.

RABBITS

This is largely a child's pet. Most boys keep rabbits sometime in their lives. They increase rapidly, beginning to breed at the age of six months, bringing forth five to eight young at a birth, and litters four or five times a year. Young rabbits are born blind, bare and helpless. They cannot see for twelve days.

The rabbit likes a dry, clean, airy habitation. The south side of a wall or house is an admirable place for a hutch. It should be strongly built, so dogs cannot effect entrance. It should be surrounded by wire netting and boxes, separated by partitions, used as nests. The space partitioned off should be large enough to be sub-divided by wire netting or wood, to furnish a separate nook for the young, should it be necessary to isolate them. They must have dry, comfortable quarters.

Feed raw the ordinary vegetables used in every family, also celery, parsley, the tops of carrots, lettuce, cauliflower, dandelion and clover. It also likes to nibble dried bread. The rabbit is easy to rear and thrives with kindly treatment.

GUINEA PIGS

This little animal is a native of South America, where it runs wild. It belongs to the tribe of rodents rather than of swine. While pretty, it is not always a desirable pet, as it frequently has no affection for its owner and seems incapable of doing much but eat and keep clean. The male and female use up much time licking and cleaning each other, and the creatures must be kept scrupulously clean to be comfortable. It resembles the rabbit, but is much smaller. Its feet are very short, the ears are round and nearly naked, and it is tailless. It eats grain and vegetables, breeds at two months and brings forth four to ten young at a time.

The Laundry

Time and Labor Saving Helps

HEN we wash we want, first, clean clothing; second, white clothing, to remain white, not to become yellow; third, to keep all colored goods bright and clear; fourth, clean, soft, unshrunken flannels and woolen goods. These are the results we hope for and should have when laundry work is well done. To obtain them it is necessary to use the mind as well as the hands. Conditions differ. No general or explicit directions can be given which would meet every crisis or which could be mechanically followed in every case. The power of water to remove dirt differs in many localities. All clothes are not soiled exactly alike; some soaps are stronger than others. Wash with brains as well as with soap and water, and note results, remembering, too, that "practice makes perfect," and one washing does not make a laundress.

All About Water

The best laundress, using the best methods, cannot get good results with poor water. The water needs to be soft, free from iron, decaying vegetable matter, mud or clay. Where the water supply is hard, or has any of these taints, it is best to use rain water, depending on cisterns and hogsheads. If this supply is inadequate, hard water may be softened, and muddy water be cleared. Hard water should be softened with some chemical. It is difficult to give the exact amounts, since water differs in its degrees of hardness, but the following directions apply to moderately hard water and may be increased or decreased as necessary.

To Soften Water

Use 1 level tablesp soda to each gal water. Dissolve the soda in hot water before using it. Let mixture come to a boil, skim, strain and use. Or use ½ tablesp lye to 1 gal water, and proceed as with soda. Another way is to use 1 tablesp powdered borax to each gal of water, and proceed as with soda. To soften water with ammonia, use cold or slightly warmed water. Add 1 teasp liquid ammonia to each gal water. Hot water causes rapid evaporation of ammonia. To soften water with wood ash lye, add 1 qt water and boil 5 minutes, adding a pt more water as it boils. Remove from fire, add 3 qts cold water, let settle and strain. Use enough to make the water feel soft and sudsy. An excess of any one of these softening agents tends to yellow the clothes. To soften and purify hard water, put 1 gal wood ash lye into 1 barrel water. To purify it, suspend in the water a cheese-cloth bag containing a pound of lump charcoal.

Time and Location to Wash

Don't be conservative. The day that suits your needs is the best washing day, whether it be Monday or Friday. The best location is where it is warm in winter, cool in summer, always well ventilated and convenient to water.

To Soak or Not to Soak?

Some housekeepers prefer to soak white cotton or linen clothes over night in tepid suds, and some are very much opposed to this method. Both have their reasons. Waters in different localities differ, and all clothes are not soiled alike. This much, however, may be said, that as a general rule, when the water is hard and the clothes very much soiled, soaking in tepid soda or soapy water facilitates matters. The chemical changes that take place loosen the dirt and make washing easier. Sometimes soaking the clothes one or two hours is sufficient. The water should be well softened with soda, borax or soap.

The Board or the Washing Machine?

Every housekeeper who must do her own family washing should have a modern washing machine. This is true, even if she has a woman come to the house to do the washing for her. By the aid of a good washing machine, clothes of all kinds, from the finest to the coarsest, can be washed in half the time and with half the strength and labor required when only a washboard is used, necessitating back-breaking work.

A good wringer is another necessity. Get a good machine and wringer, handle them carefully, according to the directions that generally come with them, and you will have cause to bless the men who invented such labor-saving machinery.

About the Wringer

When buying a wringer, see if the rubber is thick. If it is only a thin coat over metal, the wringing will break buttons on most goods. Get one with a thick rubber roller. When the wringer has done duty on wash day, cleanse it well with kerosene, rub dry, loosen screws, and set away in a clean place.

About Clothespins

The advantages of patent clothespins are that they last longer, one loses less, they are always in the place where you use them, and are less apt to break. In any case, never use the cheap, splintery clothespins. To soak the clothespins in warm water before using makes them more pliable and easier to handle.

Sorting Clothes

Sort into heaps, each pile containing one kind only. If anything is torn, mend it; if there are stains, remove them. Shake and brush out the flannels and woolens and make one pile of them. Put the prints and colored things on another pile. Make separate piles of the stockings and handkerchiefs. Do the same to table linen. Make another pile of the fine, white wash, towels, bed linen, etc, and another of the kitchen and pantry towels, dust cloths, etc. The white clothes may or may not be soaked in suds the night before wash day, or only a few hours before washing, as preferred. To wash, proceed according to the following directions:

How to Wash White Clothes

Prepare a good suds of soft water, as hot as the hands can bear. Put the cleanest pieces, half dozen at a time, in suds. Wash on both sides, right side first, and rub no more than necessary to remove dirt. Fold buttons and strings inside and wring well. The dirtiest parts will remain gray; soap these well and place the garments in tepid suds in boiler. Hot water would "set" any remaining dirt. Bring slowly to boiling point and allow to boil about five minutes. Do not permit them to cease boiling after they begin. Provide a tub of tepid water and punch each garment well under the surface as soon as removed from boiler. Rinse thoroughly to remove

every particle of soap. Use bluing or not, as one chooses, in final water. If thoroughly rinsed, they do not need it. Few linens need any starch, but if very flimsy, a very little starch improves them.

To Wash Colored Clothing

Set the colors if they are not fast. A black, blue, green, or combination of such hues, or clothing in which these colors predominate, should first be soaked for an hour in salt and water, ½ cup salt to each gal water, and have a handful of salt in final rinsing water. Linen, of natural color, should be cleansed in hay water, made by pouring boiling water over hay, straining it off and letting it partially cool, then washing garments as usual in this water. Use ox-gall, ¼ cup to each gal water, to set color in gray or brown goods. Vinegar, ½ cup to each pail of water, will set purple, mauve, heliotrope and black. Soak the garments in such solution an hour before washing. Red and various shades of pink take kindly to soaking in turpentine water, 1 tablesp to each pail water. Combinations of red, blue and pink should have 4 tablesp white vinegar added to a warm rinsing water, to brighten the colors, while a cup of salt in a second and final rinse will set them. Repeat the setting process every washing, to make sure of keeping the colors. Use plenty of bluing for light blue goods, and for pink color the water with color extracted from a piece of turkey red cotton by boiling same in a little water. Dyes for cotton may also be used.

For coarsest colored garments have a slightly soapy warm suds. Wash the lightest colored pieces first, and do not rub on any soap. On very dirty places a little mild soap may sometimes be used. Rub as little as possible, but squeeze or knead, or rub soiled spots between hands. If starch is needed, have it ready and use at once, to prevent colors running.

On the finer grades of colored clothes, use greater care. Rubbing breaks the surface. Avoid it if possible. Put the articles in a tub of warm water in which enough soap jelly to make a good lather has been dissolved. Let soak ten minutes, then wash by lifting up and dropping, by squeezing and slight hand rubbing on most soiled spots. Do not wring. Squeeze as dry as possible and if still soiled, put through another water. Rinse in same way and remember, half the washing is in this process. Don't put tinted or figured goods in the boiler. Don't use strong soap, much soap, or any kind of washing powder on them. Don't let them lie wet any length of time. Rinse well and dry quickly.

To Wash Percale Garments

Tie 1 qt wheat bran loosely in a sleazy cotton bag and boil it with 3 pails of water. When cool, use half to wash the dress in, using a very little soap on the most greasy or soiled places. Rinse immediately in the remainder of the bran water, then in a pailful of lukewarm water. Turn, and dry in the shade on a clear, breezy day. Iron while damp. The bran water usually makes the goods as stiff as when new. Any colors that can be washed at all will bear this method safely. [R. W. H., Me.

To Wash Handkerchiefs

Very soiled handkerchiefs are disagreeable to wash. They should first be soaked in warm, salt water. Punch and stir them with a stick, and if necessary remove them to a second salt water bath, before placing in regular wash. After that proceed same as with other white clothes. Handkerchiefs from catarrh patients should be put through water to which some carbolic acid has been added.

To Wash Dish Cloths and Towels

Dish cloths should be washed after each using and be hung in the air and sun to dry. When weekly washing is done, wash and boil them thoroughly. This is most important. For both dish cloths and dish towels, the suds should be strong, and a tablesp kerosene to each gal water may be used for boiling with strong suds. The air clears away all odor and the boiling suds removes germs, grease and dirt. Rinse thoroughly through several clear waters.

To Wash Flannels

Stir into soft water just enough melted mild soap to make a good suds, using lukewarm water. Sort the flannels. Wash the lightest colored and least soiled first. Place one at a time in suds, punch, shake, and knead until clean. Never rub flannels; it makes them rough and hard. If the wash is large, or very dirty, two tubs of suds should be used. Rinse through two tubs clear, soft water, same temperature as that of the suds. Fold very smoothly, with buttons inside, and squeeze the water from garments with hands or wringer. Do not twist or wring flannels. Shake well to raise the soft fibers, crushed in the washing process. In nice, breezy weather, hang outdoors. In bad weather dry in house. They want to dry quickly, or they may shrink in the process.

Wash colored flannels the same way, as swiftly as possible, and in the last rinsing water put vinegar, 1 tablesp to each qt water. This restores some colors. To prevent colors running, if they show such inclination, dissolve 1 tablesp salt in each qt of the third rinsing water, just enough to immerse the article. Pull knitted and woven articles into shape with hands while drying. Borax may be used in place of soap, 1 tablesp to each qt of water.

When hard water must be used, make suds in same way and add 1 tablesp ammonia to each gal water. Wash swiftly as possible, especially colored goods, in which the color may start. It is easy to soften hard water and better for the garments to use such water. When washing flannels it is important to note the following: Don't use waters of varying temperatures; don't use hard water; don't use strong soaps; don't leave flannel soaking in any water; don't wash them on rainy or freezing days; don't hang where the heat causes steam to arise from them; don't iron with hot iron or while wet; don't soap them; don't rub them while washing.

To Wash Woolens and Blankets

One rule always to be observed is to have the temperature of the water the same from beginning to end of washing. Choose the temperature, but keep it at one point from first to last. Using first hot, then cold, then tepid, or any other change, brings poor results. Warm water is preferable to hot or cold. Hot water injures and starts colors more readily than tepid. Warm water removes dirt more easily than cold. Lukewarm water is advisable. Prepare two tubs of warm soapsuds, using a mild soap and soft water. Punch, knead and squeeze the blankets, but do not rub or soap them. Wring, and place in second tub, going through same process again. Rinse once in soft water and hang out at once. They must not freeze. Pin the blankets on line the long way of blanket, so that any colors, if they run at all, will do so down their line. Put blankets over line just enough to pin on, so as to expose all possible surface to sun and air. When firmly pinned (use enough pins), snap and pull into shape. When dry, fold nicely in exact lines. Do not press. If directions are followed, pressing is superfluous.

To Wash Knitted Wear and Hosiery

Babies' stockings, bootees, knitted jackets, shawls and similar garments, may be washed the same as woolens, but need to be pulled into shape while drying, or dried on frames made for them. Shawls may be dried on a sheet, pinned to it, or simply pulled into shape on line while they are drying.

The feet of socks and stockings require plenty of soap, and special rubbing. Wash both sides. Leave wrong side out until mending day. To preserve the color of black stockings, add 1 tablesp vinegar to the last rinse water. Do not iron them at all, as a hot iron takes out the color.

To Wash Overalls

Soak the garments over night in strong, tepid suds. In the morning, wring them out of this and put to boil in cold, soft water to which plenty of soap and a little kerosene has been added. Boil about ten minutes, then remove and put into a clean, warm suds, and boil again, if necessary, after which rinse in several clear waters. The soaking and repeated boiling in clean, strong, soapy water, with the addition of some kerosene, loosens the soil, so that no rubbing is necessary.

To Wash White or Colored Silk

For white silk, prepare a suds of tepid, soft water and mild soap. Squeeze through hands. Wash through several suds waters, then rinse in several clear waters. Iron as soon as dry enough, first under a thin cloth, then with bare iron, not too warm. If the silk is corded or is not smooth, iron wholly under cloth. If not rinsed thoroughly, it will be yellow. Iron on wrong side when bare iron is used. In washing colored silk, if danger of running is feared, soak the garments in salt water, a tablesp to 1 qt water, half hour before washing. Even then no assurance can be given that silk may not run. They are uncertain articles. Wash the same as white silk, being as swift as possible, and using only one suds, if possible. Iron on wrong side.

To Wash Lace Curtains

Gently shake out the dust and put to soak in a suds made of mild soap and soft water. Let soak half hour. Knead and squeeze gently, then put through another soap water in same way. When clean, place in a cheesecloth bag, put into a tepid suds and boil five minutes. Remove from boiler, rinse in clear water, then rinse again in bluing water, if white curtains. If cream color, in starching add 1 tablesp coffee, or tea, to each pt of starch, using more or less, according to desired color. Fold each curtain evenly and put through a wringer. Dip in thin starch and squeeze out a little. It is best to stretch lace curtains, if possible, in frames, but if none are obtainable, they may be stretched on sheets laid on a carpet. They are apt to pull out of shape if hung on a line.

If there are no conveniences at all for stretching, iron them on the wrong side while damp enough to smooth out, and iron as straight as possible. Ironing, however, flattens the pattern, and it is difficult to get them straight. Stretchers may be bought, or one can be easily made. Old-time quilting frames fastened with wooden pins, easily made into any size, are good. Tack a piece of muslin four or five inches wide to the under side of ends and sides of frame, to pin curtains to. Another easily made frame is simply a large wooden frame covered with cheesecloth. When used, pin curtains on securely. Two curtains may be pinned on one frame, but be sure they hang evenly, if for one window.

To Clean Fine Lace

It may be cleaned by washing in benzine, out of doors, away from fire. The lace should be covered with pure benzine and be allowed to soak, with an occasional shaking, but should never be rubbed. This process may be repeated until lace is clean. While still wet it should be pinned on a flannel covered board to dry. Do not use benzine near fires or any flame at any time, even while lace is drying.

When you wish to launder laces, remember that very fine laces should always be basted to a piece of heavier material before being washed. Laces should not be rubbed. After being thoroughly soaped, they should be allowed to lie for a short time, and then be squeezed gently until cleansed. Rinse thoroughly. Laces should always be dried between clean towels. Pull out gently until straight, then lay between the folds of the towel. Press the towel carefully with a lukewarm iron until the moisture from the lace is absorbed by it.

To Wash "Comforts" and Carpets

The most successful way of washing comforts or carpets is to hang them on the clothes line, moisten all soiled places and rub them with soap, and then wash them thoroughly with the hose, and leave to drain and dry. When dry, the comforts will be sweet, clean and fluffy, with no matted or soapy cotton. The same method is fine for ingrain carpets. [F. T., N D.

Kerosene Washing

White articles, unusually soiled, can be cleaned by first soaking over night in tepid soap water. Make a strong suds in the morning, and to each 6 gal water add 2 tablesp kerosene. Boil the clothes in this, having the water cool at the start. Let boil one-half hour, punching and stirring often, then

remove them into clean, warm water, knead and punch, then wring, and repeat rinsing process. They sometimes need several boilings. Rinse first in hot and then in warm, to remove oil. When the cleanest articles have been boiled, cool the water, add more soap and kerosene and keep on until washing is done. All articles used, boiler, tubs and wringer, need thorough washing to remove traces of oil.

Washing Without Boiling

Some housekeepers do not believe in boiling clothes, especially when a good washing machine is used. They claim that boiling injures and weakens the fiber of clothes, and in this they may not be so far wrong. With the aid of a good washing compound and a good machine, it is possible to get clothes clean and white without undue work, and without the boiling process. Soak the clothes in tepid water to which some good washing fluid or soap has been added, and next morning rinse out loosely, rub soiled parts well with soft soap, put in washing machine, pour in boiling water, close machine, and turn ten to fifteen minutes. They will then be ready to rinse and blue. Very dirty white clothes may be bleached by laying the garments on grass after removing from the machine, then putting through another suds, and then rinsing and bluing. It certainly is not necessary to boil all your white clothes every week. Try to do without, and see how much easier wash day will be, while the clothes will be just as satisfactory.—[A. G., Mass.

To Wash White Silk

Make lukewarm suds with a pure, white soap; put goods into this and let soak about one hour. Draw goods through the hands, but do not rub or wring. Rinse in sweet skim milk and water and dry in the shade. The silk will look as bright as new, if ironed while damp on wrong side, with not too hot an iron.

To Wash Chiffon Veils

Make suds of warm water and a good, pure, white soap; dip the veil in and squeeze it gently until all the soil has disappeared. Do not rub at all. Rinse in several waters and pin out on clean ironing board, over which spread a clean sheet, and just before it is dry iron under a clean, white cloth. If one does not object to a crepy appearance, it is not necessary to iron chiffon veils at all.

About Bluing

While there are many varieties of bluing, the most common are Indigo, ultra marine and aniline blue. The ultra marine is a fine powder, insoluble in water, and if the laundress finds, sometimes, that there are specks of bluing on her washed clothes, she may suspect she is using this kind. It will adhere, at times, to side and bottom of tub, and therefore the bluing water should be frequently stirred. Aniline blue is satisfactory, unless a bleach has been used, which leaves a trace of acid in the rinsing water. In such cases, it may spot goods. Indigo is the most popular and reliable bluing procurable. If the bluing is in ball form, tie balls in a cloth. Strain all bluing into water through cloths, as they are apt to contain fine settlings, which spot clothes. Use little. Try the bluing water with a piece of white cloth and note the result, adding more water or bluing, as seems desirable. Have all garments rinsed before putting through bluing water. Shake out well before dipping in bluing water, to prevent streaks. Poor laundresses often use strong bluing water to cover up defective washing and unremoved stains.

Homemade Bluing

Powder 1 oz soft Prussian blue and put it in a bottle with 1 qt clear rain water. Add ¼ oz oxalic acid. Shake well. The acid dissolves the blue, and when used in just the correct proportion, holds it evenly in the water. Use about 1 tablesp for a large washing.—[R. R., Ill.

About Starch

Starch is made, for laundry purposes, from rice, corn, wheat and potatoes. Corn starch has the highest and potato starch the lowest stiffening power. Corn starch will sometimes make fabrics so stiff that a pressure breaks them. It is the cheapest starch made and must be carefully used, if alone, but can be combined with wheat starch with good results. Wheat starch is good. It makes garments smooth and flexible. Rice starch is a favorite with laundresses doing fine and delicate work. Potato starch is good for ordinary starching and can be easily made in an emergency, at home. Corn starch is much in popular use, because it is useful in ordinary work, is very abundant and cheap. For finer work, it is advisable to keep on hand a little of the other kinds, and for medium work, to use a mixture of corn and wheat starch, two parts corn and one part wheat. Many materials are used in starch to give gloss and make the iron run smoothly. Among these are paraffin, borax, lard, kerosene, gum arabic and wax.

Keeping the irons clean, smooth and bright usually produces good results, without polishing aid.

Starching Clothes

Starch, properly applied, gives clothes a nice appearance and keeps them clean longer. Only a little starch should be used on delicate material. When white goods are to receive a stiff starching, they should be dried first. Others, to save time, may be starched immediately after rinsing. Starches vary so much in strength that amounts in the following recipes are approximated, rather than arbitrarily given. Petticoats should have the lower, or trimmed part dipped in thicker starch than the upper portions, which need very thin starch. Turn each garment to be starched inside out, and see that every inch is saturated with starch water. If the garment is dry, make the starch thinner than when the garment is wet. Wring or squeeze each garment medium dry and hang in shade as soon as ready. Do not hang in wind. In starching shirts use the stiff starch. Turn the shirt wrong side out and rub the starch on neck and cuff bands, and also the bosom. Rub these parts between the fingers until they are saturated with starch, and wipe off all surplus. Smooth out all wrinkles and hang the shirt out at once to dry. Starch collars and cuffs same way.

Clear Starch

For delicate fabrics, such as thin shirtwaists, muslins, and all fine goods: Dissolve 1½ tablesp starch in 1 cup cold water. Boil well in a scant qt boiling water. Dilute, if it seems desirable.

Thick Starch

For cuffs, collars, shirt bosoms and any stiff work: Mix ½ cup starch smooth with ½ cup water, add ¼ level teasp shaven white paraffin and 4 cups boiling water. Boil two or three minutes. Some laundresses add a few drops of bluing.

Raw Starch

To be used after the thick starch, for the same articles: Mix 1 tablesp starch smooth with ½ cup water, add ¾ pt lukewarm water. Use at once. If it settles, stir well before using again.

Thin Starch

For garments needing less starch than cuffs and collars, but more than very delicate goods: In a clean pan stir smooth ¾ cup starch in 1 cup cold water, then gradually add 3 pts boiling water, stirring constantly. Boil five minutes, then add 1 pt cold water to reduce it. More cold water may be added if desired, a little at a time, till desired consistency is obtained. In all starches a few drops of bluing may be used, if the clothes are at all yellow.

Colored Starch

For black, brown, tan or green prints: Make the starch with weak, well-strained tea or coffee. Use more or less, and proceed as with other starched goods. For blue prints, add more or less bluing to the starch. For pink prints, make the starch with water obtained by boiling turkey red cotton in it. Starches of various tints can be bought, and when a lighter tint is required, mix to that tint with white starch. For ecru tint use 1 pt coffee to each gal liquid starch. Saffron tea in varied quantities, mixed with white starch, gives different shades of cream; a decoction of logwood makes a pink tint; cold tea the color of old lace, beet juice gives red hues, and spinach juice green tints.

Rice Starch

Cook ¼ lb rice to a pulp in 1½ qts water. Pour into this another 1½ qts hot water, and strain through a flannel cloth. This is very good for fine waists, nice baby dresses and any very delicate fabric.

Potato Starch

It is cheaper to buy this starch, but if it cannot be procured, when a small amount is needed, try this method of preparation: Wash a pared, large potato until perfectly clean. Put 1 qt water in a bowl and grate the potato into it. Rub the grated potato with the hands, to extract starch. Pour the mixture into a cheesecloth strainer and let it strain through and settle. Pour the water off, put on more clean water, stir, let settle and pour it off again. There will remain a white starch. Use this to make a boiled starch, same as with any other starch powder. If more is wanted, use more potatoes, according to amount needed.—[F. C., Pa.

Flour Starch

Flour is cheaper than starch, and makes clothes stiffer. I prefer it for colored clothes. It can be used for white clothes, but its continued use makes them yellow. Mix 4 tablesp flour with qt cold water, and add 1 teasp kerosene to each of prepared starch. Beat until smooth as cream, and then add boiling water, little at a time, and keep stirring, until of the desired thinness, then place on the stove and boil for a minute or two, stirring it all the time.—[E. H., Neb.

Bran Water Starch

This is used for delicate colors that will not bear soap: Tie ½ lb wheat bran in a cloth and pour over it 2 qts boiling water. Cool and use as you would suds. Another method is to put in a bright, clean kettle 2 qts wheat bran. Pour over this 3 qts cold water. Heat to the boiling point, let it steep one-half hour, then strain. If garments are very much soiled, wash first, then wring and let them soak ten minutes in the bran water, if the color shows no signs of running. If it does, squeeze the garments in the bran water thoroughly, wring or squeeze medium dry, and hang in shade. When the clothes are only slightly soiled, simply squeeze and punch in bran water, rinsing in another less strong bran water. Bran water has considerable stiffening power, and cotton garments washed in it are generally stiff enough without any addition of starch.

Starch Polish

Take common, dry potato or wheat starch sufficient to make 1 pt prepared starch when boiled; then add ½ dram each of spermacetti and white wax. When ironing clothes starched with this preparation, use a pretty hot iron and a brilliant polish will be produced.

Gum Arabic for Shirt Bosoms

Put 2 oz white gum arabic in a bowl and pour over it 1 pt boiling water. When dissolved, bottle and cork. A teasp of this mixture may be stirred in 1 pt starch, to be used on shirt bosoms. It gives a gloss usually only found on new goods.—[L. P., Va.

Starch Hints

Before making cold starch, try making soapsuds, not too strong, of white toilet soap, then add the clear starch to the suds. You will be surprised how nice the shirt bosoms, collars

and cuffs, etc, will shine, besides ironing easier.—[E. G., O.

When the starch is still hot on the stove, drop into it a lump of alum, the size of a hazel nut being about right for 2 qts of starch. The flatiron will never stick, clothes will keep clean longer; the dirt does not grind in easily, and this starch gives the fabrics somewhat of a water and fireproof nature. Spots can often be rubbed off before the material has time to absorb them.—[C. B., N H.

To starch lace curtains, use a very thin, clear, hot starch, and to each qt of this add scant ¼ teasp borax and a lump of clean lard, size of hazel nut. Tint with bluing or coffee.

Dampening and Folding Clothes

Shake each piece when removing from line, to free from possible insects and loose dirt which may have fallen on them. Line the receiving basket with an old sheet and use a clean table when sprinkling the clothes. Have a basin of tepid water close by. Linen cloths and napkins need much dampening to give a good gloss when ironed. Sheets and underwear need less. Starched white clothes need more or less. Dampen nothing that has colors which may run. Iron these while damp, or dampen a short time before ironing. Dampened clothes may stand over night, but for quick work use hot water to sprinkle.

Use the Hose

Put a short garden hose on the faucet or pump and fill the tubs easily. If, as is done in many western and southern parts, you wash out of doors, the regular garden hose is a great help in filling tubs. The hose with a fine spray attachment is also good to sprinkle clothes while still on the line. Let one person do the sprinkling, and another remove and fold the clothes at once, so they will be ready for ironing in about an hour.

About Ironing

The sooner clothes are ironed after washing, the better. They may get soiled, and it takes time to iron, air, mend and put away. Have clean, hot irons. Try one on a piece of white cloth to clean it and test its temperature. Iron muslins on the right side, prints, laces, embroideries and dotted muslins on the wrong side. Iron with the thread of the goods. Use a hot iron for table linens, sheets, muslins and plain work, but for prints a medium heat, since heat injures some colors. Ironing must be rapidly done, or the material dries out before finished. Iron around buttons, never over them.

Skirts must be stretched into shape while damp, and ironed into proper position, to avoid having them of varying lengths when done. This is not hard to do, if one follows the thread of the warp in ironing. Use a heavy, hot iron, and take care to avoid stretching bias parts out of shape, either in the first arrangement for ironing or in the ironing itself. In ironing the garment, on skirt board, place clean papers on floor, if it is likely to touch the floor. If any part of a garment becomes too dry, dampen with a wet cloth, using hot water. A plain ruffle should be ironed straight with the threads, right up into the gathers.

Sometimes irons need cleansing from starch which sticks to them. This can be done with a sharp knife. It is well to have at one's right side a clean folded paper, a piece of old, clean cloth, and a bit of beeswax tied in a cloth, also some salt on paper. When the iron is hot, rub the beeswax lightly over it occasionally, then rub the iron on the salt and paper to cleanse it, and finally test its heat on the cloth.

The Ironing Table or Board

This must be firm and smooth, and high enough to suit the worker. It should be covered with soft, heavy material in two thicknesses. A woolen blanket is excellent. Secure this underneath with strings and leave a space of a foot bare at the worker's right-hand side. On this spot place the iron stand, wax and salt papers, bowl of water, and cloths for dampening purposes. Have no patch, seam, or tear on any part of the surface portions of blanket or outside white covering cloth, which may be an old bed sheet, stretched smoothly over the blanket. The skirt board should be covered similar to the ironing table. It is handier to have it without supports, so that one may stand it on chairs or tables and set it away in closet easily when not in use. The bosom board should be 18 inches long and 12 inches wide. Cover with felt or blanket in two thicknesses, with clean, white cloth on top. Absolute cleanliness of material is necessary to success in ironing.

To Iron a Shirt

Iron the band on the right side, then on the wrong, and again on the right, until perfectly dry. Iron the back of the shirt. Iron wristbands as the collar was done. Work quickly, so the bosom will not dry. Place bosom on small board, stretch into shape and begin to iron at bottom of bosom toward neckband. Press hard, stretch and have every inch smooth when the iron leaves it. Lastly iron sleeves and body. Polishing is done by pressure and friction. Move the

iron rapidly and bear down heavily on the goods. Pressure and rapidity with a hot, clean iron are the necessary agents in this work.

To Iron a Shirtwaist

Iron neckband and wristbands first on the wrong, then on the right side. Next iron the sleeves, then the fronts and the back—the fronts first, because they are usually trimmed and iron nicer when quite damp. To iron the sleeves, fold at the seam side, but be careful not to iron across and make a fold down the center of sleeve. After ironing, loosen the sides with your hand, turn sleeve over and iron the other side. Now turn the sleeve with the hand so that the seam rests on table with the unironed strip above it. Smooth out this strip with a small iron, then slip the iron inside the sleeve and with its point toward the shoulder, iron the top of the sleeve and the gathers at shoulder. Iron gathered portion at cuffs in same way.

To Iron Lace

In order to avoid the stiff, shiny appearance of most ironed lace, place the damp lace right side down on a thick, soft towel —one having a rather rough surface—and iron with an iron not too hot. Bear down on the iron sufficiently to make the figures on the lace stand out, and it cannot be distinguished from new lace.—[F. T., N D.

How to Treat Fringed Goods

Napkins, towels and tablecloths having fringed ends should have the fringe disentangled as much as possible before ironing. Straighten with hands, beat gently, then brush or comb out straight as possible, trim off even with scissors, and iron.

Care of Irons

Do not leave irons standing on the back of stove, to gather dust and splashes of grease, and to spoil temper of metal. Do not allow them to cool on the stove either, but remove them as soon as ironing is done, and after cooling put them away in a dry, clean place, and keep covered.

Helpful Hints

If you will hang out smoothly all such flat pieces as towels, sheets, pillow-cases, etc, and then fold them neatly when removing from the line, they will require only a little top-

rubbing or pressing with a warm iron, to be smooth and sweet and good enough for king or queen. Unironed goods have a sweet and wholesome outdoor odor that is removed by the hot irons.—[A. G., Mass.

When washing in winter, add a large handful salt to the rinse water, and the clothes will not freeze so easily while hanging them out. Dip your hands in vinegar, and they will not freeze so easily.—[M. D., Mass.

After washing and drying woolen blankets, hang them on a line in the open air and beat carefully with a carpet beater. This will make the wool soft and light.—[F. T., N D.

In place of soap for washing delicate woolen goods, silks and ribbons, try potatoes. Grate two good-sized, pared potatoes fine, and dissolve in a pailful of lukewarm water. Strain and then wash the goods in the potato water and rinse thoroughly. For outside garments this method is especially good.—[F. T., N D.

In hanging clothes to dry, hang the thickest part highest, otherwise the water would run into the thick part and the drying process be retarded. Hang everything inside out, so that any accidental soil will strike the least important portion of article.—[E. E. K., Mass.

Do not use soap when washing soiled lisle thread gloves. Instead, use ammonia, 1 teasp to 1 qt water. By so doing you avoid streaks and spots, such as are apt to be left when soap is used.—[E. E. K., Mass.

To the water in which the wash is put to soak, add a very small amount of kerosene. The kerosene loosens the dirt and renders the clothes whiter. A small quantity (about ½ teasp), may also be added to the starch. This gives a gloss to the ironing and causes the irons to run smoothly. No odor will remain in the clothes from the use of the kerosene, if they are aired before putting away.—[W. B. T., Va.

To clean the rollers of a clotheswringer of the lint and stains that collect on them, rub with flannel cloth saturated with kerosene.—[M. J. L., Mich.

Never use cleaning fluids in the same room with a lamp or a fire, as they are almost always explosive.

In hot weather, if you use a fire on ironing day, make the hot oven useful by baking bread in it, and other things that require a hot oven.

Denatured alcohol irons are now on the market. They are easy to handle. One filling will do three or four hours' work at a cost of about one cent per hour. The ironing may be done outside or in any cool room.

Run your clothes lines north and south, so that clothes needing sun may get it in the morning.

A wire line may be made from an old telegraph wire, if it is not rusted. Use it for colored clothes and leave it up all

the time. Wipe it off with a damp cloth before using. If you use a rope, take it in after each washing. Repeated wetting rots and soils it.

There are remarkably good clothes dryers on the market, that would save many a pneumonia victim brought to the grave because she attempted to hang out clothes in windy or freezing weather, while she was hot and perspiring from the washing. The clothes may be hung on these dryers from a window or veranda. If you can't afford one, use a double pulley line from the window.—[A. G., Mass.

It is just as convenient to sit as to stand when ironing, and lessens the fatigue of the work. But if you must stand, put some soft padding on the floor you stand on. It will rest your feet.

On the two posts supporting the clothes line I have wooden boxes, with tight-fitting hinged lids on a slant, nailed at a convenient hight, in which I keep my clothes pins. Until you try the same plan you will not realize the number of steps this saves.—[Mrs A. B. S., N Y.

To Make Clothing Waterproof

Close waterproof cloth fabrics, such as glazed oilcloth, India-rubber cloth, etc, are extremely unhealthful to wear for any time, as they do not permit perspiration and the exhaled gases from the skin to pass through them. They are air-tight as well as water-tight. To make a garment waterproof, but so that it will still maintain its porosity, proceed according to the following directions, copied from a European army recipe: Dissolve 2¼ lb alum in 10 gals water. In a separate vessel dissolve the same quantity of sugar of lead in the same quantity of water, and then mix the two solutions. The liquor will appear curdled. Dip the well-brushed garment in this liquid until every part is well penetrated, then squeeze carefully (do not wring), and dry in the open air, or in a warm apartment. When dry, dip the garment in fresh, cold water and dry again. This is generally enough, but in some cases it is well to dip the garment twice into the waterproofing bath, drying each time, and then finally to dip into the cold water and to dry. This process will also render the garment partially non-inflammable. The waterproofing bath is said not to fade goods, but it would be well to experiment first upon an old coat which it is desired to wear at work in rainy weather.

To Make Dresses Incombustible

By putting 1 oz alum or sal ammoniac in the last water in which muslin or cottons are rinsed, or a similar quantity in

the starch in which they are stiffened, they will be rendered almost inflammable, or, at least, will with difficulty catch fire, and if they do, will burn without flame. If this simple precaution would be adopted by every housekeeper in the land, without doubt it would be the means of saving many grown people as well as children from death by burning, or being disfigured for life. The alum or ammoniac helps to brighten the colors of cotton goods.—[Mabel Page.

To Shrink Cotton Goods

To shrink cotton goods before making into garments, without destroying the new appearance, try this plan: Take old sheets and tear them to the width of the goods to be shrunk, sewing the ends together to make the strip as long as the new piece of goods. Dip the sheets in warm water and wring as dry as possible, with the hands. Spread out smoothly and lay a single thickness of the new cloth on the sheeting strip, keeping both as smooth as possible, to avoid wrinkles in the new goods. Begin at one end and roll them up together in a very tight, smooth roll. Wrap the bundle in a heavy blanket and let it remain over night. In the morning press with a hot iron, and though the goods will have lost several inches in length, the new look remains.—[H. M. W., Ill.

To Sponge and Shrink Woolen Goods

Lay the goods perfectly smooth on a clean, smooth table. Cover all over with muslin cloth wrung from hot water. Carefully roll both together on a stick, allowing no folds or wrinkles. Let lie several hours. Press with a moderately warm iron on wrong side of goods, always along thread of the goods. Use a smooth ironing table. To press folds or seams in heavy cloth, wring a piece of muslin from hot water, lay it on the fold or seam, and rub the iron along the seam, so as to open it. Then remove the muslin and press the cloth until dry.

To Renovate Velvet

Brush and clean as well as is possible, then pass the back of the velvet over several thicknesses of wet cloth laid on the face of a hot iron. The steam will penetrate the velvet, raise the nap and remove wrinkles. Repeat until smooth and satisfactory. Finally dry the velvet by passing the back of it over the face of a warm iron. To clean velvet coat collars and cuffs, dip a hair clothes brush in fine sand dampened with ammonia water, and brush lightly.—[Mrs J. C., N Y.

To Remove Shine From Woolen Garments

Either sponge on right side with ammonia water (use warm water) and iron dry on wrong side, or steam the shiny parts by passing them over a wet double cloth laid on the face of a hot iron. The steam loosens the grease, which can then be easily sponged or brushed off.

To Freshen Black Dresses and Silk

Sponge woolen or cotton goods with alcohol mixed with water, 1 part alcohol to 3 parts water. Sponge on the right side and press with warm iron on wrong side. To cleanse and freshen black silk, sponge thoroughly with cold, weak tea, then iron on wrong side with a cloth between the silk and iron. [P. R., La.

To Remove Ironing Scorch

A remedy for badly scorched places from a hot iron is a ½ pt vinegar put on the stove in a porcelain-lined saucepan. To this is added the juice of 1 large onion and 2 oz fuller's earth. This mixture should be boiled five minutes, strained, cooled and bottled. In removing the scorch, a little of the mixture is put on a clean, white linen rag and rubbed over the scorched place until it disappears. Several applications may be necessary. Another method is to expose the scorched spots to the sun until they have bleached out. Let the sun shine upon them through glass.

To Dry Lace Curtains Without Stretchers

Tack two sheets lengthwise, allowing ends to overlap, to a sunny house-side. Be sure that the sheets are straight, smooth and tight. After laundering curtains, pin to sheets, stretching carefully to retain shape of curtain. Pin upper edge of curtain first, putting a pin in each scallop to hold in shape. Leave curtain up till thoroughly dry. In case of a ruffle, hang from lower edge. While curtain is drying, go around ruffle several times, pulling and smoothing it out with the hands. This curtain will require no ironing.—[Mrs W. R. T., Va.

To Hang Small Articles

I find a strip of cotton cloth a great help in frosty weather. Take a strong strip of the cotton, say between 1 and 2 yards long and about 3 or 4 inches wide. Now stick strong safety pins along one side and fasten all small articles, such as collars, cuffs and pocket handkerchiefs with the pins before

taking out to the line. The strip of cotton can be put on the line and held by the clothespins like the larger pieces, and taken in the same way, without getting frozen hands or tearing small pieces. Every housekeeper knows the trial of hanging out small, frozen pieces of clothing.—[Mrs Young, Mass.

A Clothespin Bag

For the clothespins make a sack of two pieces of bed ticking, each about 12x16 inches. In one cut a circular hole, large enough to slip the hand into easily. Hem this opening and run a small, stiff wire in hem to hold opening firm. Sew the two pieces of cloth together and finish with a small wire hook at center and at each upper corner. This sack may be hung on the clothes line and pushed ahead of one, when hanging out clothes, saving a great deal of time and worry. It should not be left hanging outside, however, to gather dust and soot. Have a place for it in the laundry, where the pins may be kept clean, and where you may always find them when you want them.—[R. R. H., Ia.

A HANDY ARRANGEMENT

To Renovate Black Silk

Cut an old black kid glove into small shreds and steep it in 1 pt water until it is reduced to ½ pt. Sponge the silk well with this, then roll up, and in about 5 or 10 minutes iron it on the wrong side, while it is still damp. The silk will retain its softness and luster, and at the same time have the "body" of new silk.

For Additional Memoranda

Soaps, Washing Fluids and Bleaches

Economical Homemade Preparations

THE housekeeper who makes her own soaps, washing fluids, and bleaches economizes in more ways than one. She not only saves the difference of cost between the homemade and boughten articles, but by the use of pure homemade soaps and bleaches, instead of the all too often adulterated commercial stuff, she insures longer life for the clothes which must make more or less regular visits to the tub. In the average kitchen enough grease can be readily saved to make all the soap needed for laundry uses, and the making of soaps, washing fluids, bleaches, etc., is no great task, if the following directions are carefully followed. For toilet soap recipes, see chapter on Personal Hygiene.

About Soaps

What the housewife wants of soap is that it shall clean her garments with as little injury as possible to the fabrics. She asks nothing more. So soaps may be divided for laundry use into merely hard and soft, mild and strong. A strong soap is best for ordinary laundry work, though soft soap, usually the stronger, is generally too strong for ordinary washing. It is largely used in washing greasy articles of clothing, unpainted floors, and for rough work and surfaces. It is economical to make one's own soap, because that which is bought is often adulterated, and therefore costly. Then, too, the refuse fat of the household can be used to good advantage.

To Prepare Grease for Soap

There is no greater disseminator of disease than that nuisance, the oldtime grease pot, that disgusting receptacle into

which the untidy housewife threw all the skimmings, drippings, rinds and bits of grease. In cold weather it was unsightly and nastily odorous; in summer unspeakably filthy and dangerous to health. Few exist now, but those few should be abolished. Try these ways:

Boil in a little water all refuse grease. When all that will has dissolved, set the kettle aside to cool. The pure grease will rise to the top and can be lifted off, a clean, wholesome contribution for the soap kettle. Throw away any unmelted parts or burn them.

Preserve all the grease and fat scraps in a weak lye. The pure grease may be boiled in clear water. Let the mixture cool. The grease will come to the top and can then be easily removed. Dry off the grease carefully and be sure there is no water adhering to it, before adding it to the grease tub or jar. When saving grease for soap it is well to do this occasionally, as impure grease is liable to become very offensive. The above precautions will keep it sweet.

If the grease is very foul in smell, it should be put in a boiler with water, on the fire (about three times as much water as there is grease), and a small quantity (say 1 teasp for 5 to 10 lb grease) of permanganate of potash added, by brisk stirring. After the mixture has cooled a little, strain and let cool. The cake of fat may then be taken out and put in a cool place, or in the pot in which it is to be remelted for transformation into soap. The purpose of the permanganate of potash is to remove the rank odor of the grease, which otherwise would contaminate the soap also.

To Prepare Tallow for Soap

Tallow, when exposed at common temperature in the air, gradually acquires an unpleasant, rank smell. This can be prevented by cutting it in slices and boiling it in water containing for every 25 lb of fat 1 oz alum and 2 oz salt. This is boiled together and strained. After cooling the cake of strained fat is taken up and washed in clean water, and then remelted at a low heat and poured into a barrel containing twice as much water (by measure) as of the melted grease. To this water there should have been added about 10% of good, clear, sweet soap, compared to the amount of grease. The water is not to be more than blood heat, and the temperature of the grease about the same. The whole is then thoroughly stirred with a broad stick till cold, when it is allowed to rest and separate from the water, which is afterward withdrawn. The fat remaining is in a granular state and should be completely drained and then packed in crocks or barrels. Grained fat thus prepared is kept sweet and is also acted on by the lye with far greater ease and rapidity,

in consequence, no doubt, of its grainlike state, which enables the alkali in the lye to act upon a greater surface at once, without requiring the boiling of the fat with the lye. It produces a soap free of rank smell, while the grained fat may be preserved sweet for soap-making purposes for years, if thoroughly dried before packing away.

Caution!

Be very careful when handling the soap lye or potash. The finest dust of it will burn your eyes and the tiniest speck will make holes in your skin or clothes. Open the can carefully, and wear gloves on your hands. Add only cold water to the lye—it will become hot, and must cool to summer heat before the grease is added.

To Shape Homemade Soap

An excellent way to put up homemade hard soap is to use old corset boxes. Pour the warm soap into the box, lined with wax paper, and let it harden there. When hard, you can either pack it away in the boxes, or tear away the pasteboard, leaving long bars of just the right size and shape.—[E. K., Mass.

White Lye

Pour a pailful of boiling water over 4 or 5 qts of wood ashes. Oak ashes are strongest and those of apple tree wood are the whitest. Let stand a while to infuse and then pour in a little cold water to settle it, after which you can pour it off clear. This is good to use in boiling very dirty clothes. When made right it is equal to soda, but does not injure the clothes, unless used extremely strong.

Hard Soap—I

Dissolve 1-lb can powdered lye in 2½ pts cold water. (Be careful in handling the lye, as even the dust of it affects one's eyes and burns one's hands, if it scatters.) The resultant liquid will be hot. Cool it to summer heat, then stir in slowly, 6 lb melted grease, which has also been cooled to summer heat. Stir, and when the mixture becomes the consistency of honey, pour it out to cool, in shallow paper-lined pans, and when stiff, cut in pieces of desired size. You will then have good, hard soap. By this process no boiling is required.

Hard Soap—II

Dissolve 1-lb can of potash in 1¼ qts cold water, add ½ cup ammonia, 1 tablesp glycerine and 1 tablesp powdered

borax. Have a 5-lb pail even full of clarified grease warm enough to pour. When the potash has cooled add the grease, a little at a time, stirring all the time with a wooden spoon. Stir for 10 minutes, then pour into a well-greased, flat baking tin, lined with white cloth or paper. When firm, cut into squares. Pile up in log cabin fashion.—[A. S. B., Mass.

Hard Borax Soap

Mix 1 lb potash and 1 tablesp powdered borax in 1 qt cold water. This mixture becomes very hot and must be allowed to cool. Warm 5 lb of clean, strained grease. Turn the cold potash mixture on the warm grease in a very thin stream, stirring all the while. Stir ten minutes, or until it is thick and ropy and looks like strained honey. Then turn into molds or into agate or earthen dishes, and cut into squares, when cool enough. This is excellent for laundry use. Being so very hard, it does not waste in washing.—[M. J. L., Mich.

Hard Soap With Lard

Dissolve and prepare 6 lb soda and 3 lb stone lime in 4 gals soft water by boiling, settling and pouring off the clear fluid. Add this to 6 lbs melted lard and boil until it becomes soap. Pour into pans and when cool cut into bars. Allow a week to harden.—[F. M. T., Me.

Hard Soap With Tallow

Dissolve 2 lb salsoda in 1 gal boiling soft water, then add 2 lb lime. Let stand a few hours, stirring occasionally, then let settle and pour off the clear liquid. In this boil 2 lb tallow until it is soap. If desired, scent with a few drops of sassafras oil. When cool, cut into bars or cakes.—[F. M. T., Me.

Hard Soap—Boiled

On 6 lb washing soda and 3 lb unslaked lime, pour 4 gals boiling water. Let stand until clear, then drain off and put in 6 lb clean, melted fat. Boil this about two hours, or until it begins to harden, stirring it most of the time. While boiling, thin it with 2 gals cold water, which was previously poured on the alkali mixture, after draining off the 4 gals. This must be clear before it is drawn off. Add it to boiling soap mixture, when there is danger of it boiling over. Just before taking from the fire, add a handful of table salt. Stir a little in a saucer to try the thickness. Wet a large dripping-pan, turn in the soap, and let it stand until hard, then cut into bars and put on a board to dry in the sun.—[Mrs M. W., Vt.

Soft Laundry Soap

For one barrel, take 8 lb potash and 10 lb melted and clarified fat. Put the potash into a large iron pot of 3 or 4 gallons' capacity, with hot, boiling water to nearly fill it. Heat the fat in another iron pot quite hot. Put 3 or 4 gals of hot water in the barrel, previously cleaned and ready for use, and ladle into it alternately the hot fat and hot lye; stir the whole briskly for a while before more lye and fat are ladled in, and gradually add enough hot water to fill the barrel; stir the whole again, after each ladle of hot water, till the whole becomes a creamy mass, uniform in its appearance. Allow it to rest for three months in a temperate place or cellar.

Soft White Soap

To 1 lb good, white soap, cut fine (scraps from bathroom can be used), add 3 oz powdered borax and dissolve in 2 qts warm water. This mixture, when cool, should be of jelly-like consistency. To clean painted woodwork, use 2 tablesp to 1 gal of warm water. Also excellent for washing fine clothes, as it does not injure the fabric.—[A. B. K., S C.

Soap Jelly

Take 6 gals soft or rain water, add 3 lb best hard soap, cut fine, 1 lb salsoda and 4 tablesp hartshorn. Boil the whole until perfectly dissolved, then pour into vessels, and when cold it is fit for use. This makes 50 lb of fine jelly soap.—[C. L. A., O.

Homemade Soda Soap

Dissolve 3 lb salsoda in 2 gals warm water. In a separate vessel slack 3 lb of good quicklime; then add to it the soda solution and stir the whole thoroughly with a stick. Lastly add 2 gals boiling water, stir again and let it settle. Pour off the clear liquid into a soap-making vessel and stir into it 6 lb of melted and strained grease and 2 oz powdered borax. Let it boil slowly till it gets thick and ropy (about ten minutes' boiling), after which pour into forms and let get cool. This makes an excellent hard soap. After drying, cut into bars.

General Purpose Soap

Use 1-lb can potash, 5½ lb strained grease, ½ cup ammonia, and ½ lb borax. Dissolve the potash in 3 pts cold water, (this causes the water to boil). When cold, stir in the melted grease, then the ammonia and the borax, stirring all the

time. Pour into flat pasteboard boxes to cool. When cold, cut up in cakes. A good scouring soap can be made by lastly adding fine, white sand and stirring thoroughly. Fine, ground oatmeal added makes a good toilet soap.—[Mrs. C. B., N. H.

Prepared Laundry Soap

A cheap, hard soap can be made by shaving 4 large bars of yellow soap into thin slices. Put it into 2 gals of soft water, and when nearly dissolved, add 3 oz borax and 2 lb sal soda. Stir till all is melted, and when nearly cool stir in slowly 1 oz liquid ammonia, mixing it well. Let stand one or two days, cut into bars, and dry in a warm place. It can be made for about 3 cents per lb and in less than half an hour, and it is good for all household purposes.—[S. L., Okla.

Labor-Saving Soap

Into 10 qts water put 2 lb salsoda and 2 lb common yellow soap cut up fine. Boil together about two hours, after which the soap will be ready to use. Allow about 1 lb of this soap for every pailful of water in which you boil the clothes. They will then require no rubbing, but need merely to be rinsed and will be found to be perfectly clean and white.

Erasive Soap

Cut up fine 1 lb of the best castile soap and dissolve this in ¼ pt hot water with ¼ lb carbonate of potash. Boil the soap with the potash until it is about thick enough to pour into molds, then cool and add ¼ oz each of alcohol, spirits of camphor, hartshorn and pulverized charcoal, stirring well. Pour into molds to cool. This is good for stained hands.

Soap Bark for Woolen Goods

To prepare soap bark for cleaning dark woolen goods, pour 1 qt boiling water over 2 oz soap bark. Let it boil gently two hours, then strain through cheesecloth into a clean pail. Have ready a smooth board, lay each piece of the dress separately on it (after the dress has been ripped and brushed), and sponge it on both sides thoroughly. After all the cloth has been sponged, fill a large tub with cold water and rinse each piece, so as to remove all traces of the soap bark, and then put them through the wringer. Roll them separately, laying them in a basket. When all are rinsed and wrung out, begin pressing the first that was rolled up. Iron on the wrong side until dry; then hang on a clothes horse to air for some hours. They will look like new.—[Mrs A. A. S., N J.

Chemical Washing Compound

This recipe calls for ¼ lb each of soap, washing soda, and quicklime. Cut up the soap and dissolve it in 1 qt boiling water. Pour 1 qt boiling water over the soda and 3 qts boiling water over the quicklime. The lime must be fresh. If it is good, it will bubble up when pouring the water over it; each one of the above must be prepared in separate vessels. When the lime has settled and the water on top is perfectly clear, strain it carefully without disturbing the settlings. Put this strained lime water into a large vessel with the melted soda and soap, and let it scald long enough to dissolve all the ingredients thoroughly. The above amount will make 8 to 10 gals of strong soap water.

Washing Fluid—I

This preparation will save considerable soap: Slake ¾ lb of best lime in sufficient boiling water, then add to it 3 lb sal soda previously dissolved in 4 gals hot water. Stir the whole thoroughly and allow to rest and settle, then pour off the clear liquid and bottle and cork. Allow 1 pt of this fluid to 2 pails of water.

Washing Fluid—II

Use 1 lb lye or potash, 1 oz salts of tartar, and 1 oz salts of ammonia. Put the potash and salts of tartar in 1 gal warm water, and when dissolved add the ammonia. Bottle and cork. Use ½ to ¾ cup of the fluid to a boiler of soft water. Put the best white clothes in first, then the next best, and so on. Scald (not boil) 20 minutes.—[M. J. L., Mich.

Washing Fluid—III

Dissolve 1 lb potash in 4 qts cold water. Let cool, then add 2 oz powdered salts of tartar, 2 oz powdered borax, and 2 oz liquid ammonia. Use ½ cup of this in a boiler of cold water for clothes that have not been very much soiled, more for very soiled ones.—[R. W. H., Me.

Washing Fluid—IV

Dissolve 1 lb potash, 2 oz ammonia, 2 oz salts of tartar, and 2 oz borax, in 5 qts warm water. After all is dissolved, add 3 qts cold water and 1 cup spirits of turpentine. Keep in bottles corked tightly.—[Mrs H. E. S., N H.

Fluid Soap

Cut one bar of good laundry soap into shavings, put in 2 qts of soft water, and boil until dissolved. When it cools, add 1 cup ammonia, 2 tablesp powdered borax and sufficient water to make the original 2 qts or more. Last of all add 1 cup kerosene, and stir well until cool, and a smooth emulsion is formed. Into about 3 or 4 gals of warm water stir 1 cup of this mixture, and soak the clothes over night. You will find that the dirt will wash out very easily, and you will be saved a great deal of unnecessary rubbing. Clothes washed in this manner will be as white as snow.—[F. E. F., O.

The Removal of Stains

Don't use acids except as a last resort, since they often attack the fabric itself, especially in unskillful hands. In using acids, the best manner of procedure is to fill a bowl with boiling water and over it stretch the stained goods. Use a medicine dropper to apply acid and use a very little at a time. Dip the saturated spot into the water often, applying the acid again if spot persistently remains. Always have another vessel near, containing about 2 tablesp liquid ammonia to 1 pt water, to rinse the cloth in, as soon as operation is over, so as to neutralize the action of acids. Stains are harder to remove when left on for any length of time. Therefore, tackle them at once.

Oxalic Acid Solution

A solution of oxalic acid will remove most stains from white material, but if used too often or very strong, weakens the fabric, and should be washed out as soon as expedient. Put 1 oz oxalic acid crystals in a pt bottle and fill with water. Unless the stain is old and fixed, dilute this with water when using. Make a swab on a stick for applying acid, as it will burn the fingers. As soon as the stain disappears, wash the spot with ammonia water and afterward rinse in clear water. Label the bottle of acid "Poison," and keep it out of reach of children.

Javelle Water

Boil 2 lb washing soda for 10 minutes in 2 qts soft water, then add ½ lb chloride of lime, and let dissolve and settle. Strain and bottle the clear liquid. It will take stains from linen and all washable goods, and in addition is excellent to bleach faded shirtwaists and dresses to pure white. Soak the faded garments for several hours in javelle water reduced

one-half with clear water. Rinse in clear, tepid water and lay garment on grass in sun, turning occasionally. If one application does not remove all discolorations, try another.—[G. B., Mass.

To Remove Stains With Javelle Water

This is for white or washable goods. Place the stained spots on some hard substance not susceptible to alkali—as the bottom of a platter—and apply the water with a brush. Rinse out in clear, cool water and again in ammonia water—1 teasp spirits of ammonia to each qt water. If the stain is obstinate, repeat operation, being sure to rinse well every time, to keep fabric intact.

Mildew Spots

It should be remembered that mildew is a plant growth. If it is permitted to remain and take root in a fabric, a time is sure to come when the mildew cannot be removed without removing the cloth with it. It should be tackled as soon as perceived. Soak the garment over night in buttermilk. Spread on the grass to dry. Salt and buttermilk are good for colored goods. Let lie on the grass for a day and night, renewing the application four or five times a day. The persistent use of salt and lemon juice, and exposing the wet goods to the sun, will also work wonders.

Grease and Paint Stain Remover

Cut up 4 oz white castile soap and dissolve in 1 qt water over a fire. When melted add 4 qts hot water. Let it become nearly cold, then add 5 oz spirits ammonia, 2 oz alcohol, 2 of glycerin and 2 of ether. This will keep for years. Use half quantity, if preferred. It will remove any paint or grease stain, no matter of how long standing. Saturate the stain with this mixture and rub gently with cloth, brush or sponge. [M. A. J., Wis.

To Bleach White Fabrics

Here are some of the reasons why white clothes become yellow: Idle too long; drying indoors; insufficient rinsing; poor soap; not washing thoroughly; too much alkali used in softening water, and the natural tendency of many white fabrics to turn yellow, despite all possible care.

Our grandmothers used this method of bleaching yellow fabrics: They began early in the spring before insects appeared to spoil their work. They boiled the clothes in

soapsuds, wrung them loosely and spread them on the grass to bleach. They repeated this process weekly until, with nature's aid, the color became white again. When this simple method failed, they tried another. They boiled and rinsed them and immersed them in a liquid made by using buttermilk and water in equal parts. Then let the garments lie in this mixture several days, then rinsed them out, boiled them in soapy water and kept on repeating the process until the garments were white.

While bleaching powders are plentiful and cheap, at least at first cost, it is well to recollect that the chemicals they contain are powerful and may destroy fabric as well as remove the yellow tint. The free agents of sun and grass, with a little aid from simple material and methods, are all any woman needs to bleach the yellowest of garments. Even that common bleaching agent, javelle water, is composed of chloride of lime and sal soda, and, too freely used, or insufficiently removed by rinsing, has power to corrode and weaken the articles on which it is used.

Sometimes, to whiten yellow garments, after the usual process of washing, you may add a teasp powdered borax to every pail of water in the final rinsing. Another way is to soak the clothes over night in cold water. Next morning dissolve ¼ lb chloride of lime in 6 pails of water. Let clothes soak in this solution two hours, stirring often, then rinse out and boil them. Rinse in clear water and then hang them out to dry.

To Bleach Faded Garments

All prints, muslins or colored cottons may be made entirely white by being thoroughly cleansed of dirt, then soaked one hour in hot cream of tartar water, 1 teasp tartar to 1 qt water. Wash the garments in the same water, heating it again before washing, and dry out of doors.—[G. B., Mass.

How to Remove Stains

ACID—From white linen goods. Tie a few teaspoons of pearlash up in the stained portions. Or, scrape some soap in cold, soft water, put the linen in, and boil.

ALABASTER—To clean stains from alabaster, put whitewash on stains, leave on several hours, then clean off. The stains will come with it.

APPLES—Saturate the spots with warm milk and rub as you would any stain. Repeat, if necessary. This is for any cotton goods.

AXLE GREASE—Wash the spot in coal oil, rubbing it well; then wash in warm soapsuds and rinse thoroughly.

BLOOD—Moisten the stain with water and cover thickly with starch reduced to powder. When dry, brush off. Repeat if necessary. 2—Handkerchiefs stained with blood from nose bleed must be soaked in cold soda water before placing in soapy water. 3—Blood stains on mattresses may be removed by making a thick paste of clear starch and spreading it thickly over the spots. Let it remain two days, then scrape off and sponge with tepid, soapy water first, and afterward with clear water. 4—To remove blood stains from colored wash material, moisten spots with cold water and cover generously with common salt. Rub the stain moderately and wash in tepid water. 5—If of long standing, in white cotton or linen fabrics, soak in peroxide of hydrogen, and rinse thoroughly. 6—To remove from white woolen cloth, saturate with kerosene oil, let stand a few hours, then wash as usual.

BLUING—From white goods. Rinse in ammonia water, 1 teasp ammonia to 1 pt water. If caused by too much bluing in rinse water, two or three washings without bluing usually removes all traces.

CHOCOLATE—From any washable fabric except silks: Sprinkle with borax and soak in cold water, washing afterward and drying quickly.

COCOA—Soak in a strong solution of cold water and borax, then pour boiling water through the stained goods.

COFFEE—From woolen material: Saturate the spots with glycerin. Wash with lukewarm water and iron or press on wrong side until dry. 2—Coffee from white and washable fabrics: Soak stained goods in cold water; wring; spread out, and pour a few drops glycerin on each spot. Use no soap until the stain is gone. 3—Spread the stained soaked parts over a bowl and pour clean, boiling water through. 4—If the stain is obstinate, rub on a little oxalic acid, pour on more boiling water, and soak in tepid water. 5—From white cotton goods: Use the yolk of an egg mixed with 20 drops glycerin; wash off with warm water, and iron on wrong side.

CREAM—A weak solution of 1 tablesp ammonia to 1 pt water will remove cream stains from any washable goods.

EGG—From spoons: Rub well with whiting.

FRUIT—From any kind of washable fabric: Pour a little whiskey on spots before it goes to laundry. If the material is delicate, use equal parts of whiskey and water. 2—From white and ordinarily fast colored goods: Pour boiling water through stains spread over a bowl, from a hight of 2 ft or so, until the spots disappear. 3—When the stains are old and set, use, for white and fast colored goods, a solution of common table salt and water, in equal parts. Rub spots thoroughly and then wash. For white goods, in similar fix, a solution of ammonia to ¾ water may be used. Wash the spots in the liquid and afterward launder garments as usual.

4—When the stains have been laundered several times, they become fixed as dyes and can only be removed by use of some bleaching material, as chloride of lime, javelle water or oxalic acid. In using oxalic acid employ two bowls. In one have a pt warm water and 1 teasp oxalic acid. In the other use same amounts water and spirits of ammonia. Stretch the stained part over a bowl and pour boiling water through it. While hot, dip in the acid water and rub; then dip it in the ammonia mixture and rub again. After this rinse in the ammonia water, then in clear water, removing all trace of acid. Javelle water may be applied in same manner and must be used with equal care. 5—To remove red fruit stains from linen, moisten the cloth with warm water, hold it over a burning dish of sulphur, or a sulphur candle. Wash and rinse thoroughly.

GRASS—From white and washable material: Apply ordinary molasses to stain and rub, then wash as usual. If molasses is unobtainable, moisten granulated or any soft sugar and rub on stain. 2—From white clothing: Pour boiling water through the stain. It loosens the green, rinsing it away. No soap should be used on grass stains, as they leave an ugly, dirt colored blot. 3—From unwashable material: Wet with alcohol and rub toward center with a white cloth. 4—From washable goods: Wet the stain with strong cream of tartar water. Let soak three or four hours, then wash out in warm water.

GREASE—From books and papers: Heat two blotters, place soiled places between, and press with a hot iron. Repeat with clean blotters until stains disappear. 2—From broadcloth: Mix 1 oz pipe clay, ground fine, with 12 drops alcohol, and same amount of spirits of turpentine. When necessary to use, make it a little thinner with alcohol, and rub on spots. Let it remain until dry, then rub off with woolen cloth. 3—Pour over the grease stain a small quantity of benzine, and it will disappear without leaving the least mark behind. It is said that colors can be so treated without fear of injury. 4—From linen: Wash in a strong solution of baking soda and soft water. 5—From silk: Use fuller's earth, rubbing it in well. Let it remain 24 hours. Cover with a piece of brown paper and press with a warm, not hot, flatiron. Remove paper, brush off fuller's earth. Repeat, if necessary. 6—From delicate colored fabrics: Scrape French chalk on the spots and rub it in. Let it remain 24 hours; cover with piece of brown paper, and press with warm flatiron. Brush off the chalk and repeat if necessary. 7—From silk: Dampen a lump of magnesia and rub it on spots. Let dry and then brush the powder off. 8—Petroleum, machine or axle grease, from men's working suits, and badly stained coarse goods: Dip in water and wring. Rub strong soap over the wet surface,

then pour kerosene oil over it, roll, and put away two hours or longer. Wash as usual, after stirring the garment in warm water to remove a portion of applications. 9—Mix 4 oz spirits of turpentine, 1 oz sulphuric ether, 1 oz alcohol. Bottle and cork tightly, to prevent evaporation. Put on stains with a piece of cloth or sponge. A fresh stain yields at once. Old ones need several applications. Can be used for all ordinary fabrics. 10—From wall paper: In 1 qt flour stir 1 cup ammonia and water (enough to make a stiff dough) and knead until smooth. Take a piece and wipe the spots, using until soiled, then discard and use another piece. 11—From carpets: Melt half a cake white soap in 1 gal warm, soft water, and add 1 oz borax. Wash with clean cloth. Another way is to cover the grease spot with whiting. Let it remain until saturated with grease, then remove and repeat. Three applications usually remove all grease. 12—From silk: Place a sheet of thick, clean, soft paper or blotting paper over the spot, then rub a fairly hot iron swiftly over it and remove paper instantly. 13—Grease spots and places where people have rested oily heads against the walls can be removed by mixing pipe clay with water until it is creamy. Place it on the spots and leave until following day, then remove with brush. 14—From satin: Sponge with a weak solution of borax or benzine, moderately and lengthwise, never across the cloth. When partly dry, iron on wrong side with moderate iron. 15—Grosgrain silk that has a general greasy look may be sponged with hot, strained, weak coffee. Do not wring the silk, but shake it to remove liquid and let it dry. Another method is to sponge both sides with alcohol, then iron on wrong side with a piece of fine cambric between silk and iron. 16—To remove grease or oil from marble tops of sideboards or any marble: Reduce French chalk to powder, dust over the spot, hold a hot flatiron very near, but not quite on, to soften grease and make chalk absorb it. If this fails, mix common clay with benzine to consistency of putty, and apply to stains.

INK—Stains from fingers can be quickly removed by slightly dampening the finger, and rubbing the stain with the sulphur end of an old-fashioned match. Rinse with clear water. 2—From oak, ash or mahogany: Use oxalic acid dissolved in warm water, to which is added a few drops spirits of niter. This preparation will remove the stains almost instantly. 3—From white marble: Make a little chloride of lime into a paste with water, and rub it into the stains. Let it remain a few hours, then wash off with soap and water. 4—The best way to remove ink stains from wash materials is simply to smear the stain with mutton tallow before sending the garment to the wash. 5—From any washable material: Soak the spots in buttermilk before the clothes are washed. Let

them be wet with it when they go to the laundry. 6—From cloth: The moment the ink is spilled, saturate spots with sweet milk. Soak in well and remove with soft rag or sponge, then repeat milk treatment. 7—From paper: Mix ¼ lb chloride lime with 1 qt soft water. Next day strain through a clean cotton cloth and add 1 teasp acetic acid to 1 oz of the water. Apply a little to the ink blot and remove with blotting paper. 8—From unpainted floors: Scour with sand wet with a mixture of water and ammonia, equal quantities of each. Rinse the spots with strong pearlash water. 9—Saturate the spots on white, colored cotton or woolen goods with spirits of turpentine. Allow it to remain several hours, then rub between the hands and rinse out in tepid water. 10—To remove purple ink spots from white goods: Absorb all possible with thick blotting paper, while the liquid is fresh, then apply alcohol and glycerin in equal parts, and rub and rinse. Sponge the parts stained until the spots disappear.—[G. B., Mass.

IODINE—From all but the most delicate fabrics or silks: Wash spots with alcohol; then rinse in soapy warm water. 2—From any washable or woolen goods: Moisten some common starch to a liquid. Pour on as soon as stained and rub out with cloth or sponge.

IRON—To remove rust spots from any goods: Cover the stained parts thickly with alum, and lay over the open top of a teakettle of boiling water. Steam 10 minutes, then remove, shake off alum, and let lie in sun. Repeat if necessary. 2—If on white goods, saturate with salt and lemon juice, in equal quantities, expose the wet places to strong sunshine and then wash and rinse in tepid water. 3—If on white goods, apply fresh rhubarb juice and lay goods in sun until dry. Then wash in ordinary manner.

KEROSENE—From fabrics, wood or paper: It must be heated, so as to form an escaping vapor, when, if the oil is pure, it will completely vanish. Place a piece of clean cotton cloth over the spot, if on cloth, and iron with hot iron. Cloth or paper can be used on paper, and paper on floors. Floors are the hardest to clean, as often the oil left in the wood is attracted to the surface. But it will disappear if the treatment be persistent.

LIME—This does not actually stain, but spots by removing the color. A tablesp ammonia in a gal water will often restore the color. If drops of whitewash have fallen on a carpet, woolen or cotton, this solution will remove them.

MEDICINE—From silver spoons: Rub with a rag dipped in sulphuric acid and wash off with soapsuds. 2—From bed linen or night clothing, or any white cotton goods: Rub with a rag dipped in sulphuric acid, then wash as usual.

MILDEW—From white goods: Mix 1 cup soft soap with 2

tablesp powdered starch, 1 of salt, and the juice of 1 lemon. Apply to spots, then spread in sun. Let remain over night and renew the application next day if necessary. Salt wet with a little ripe tomato or lemon juice often removes set stains. 2—From linen: Rub good soap on the spots, then scrape some chalk fine and rub that on. Let lie on the grass in sun. As it dries, wet it a little. Two applications generally remove all spots. 3—Mix 1 cup soft soap with ½ cup powdered starch, ¼ cup salt, the juice of 1 lemon. Place on both sides of stain on washable fabrics. Let lie on grass until the spots disappear. 4—Mix 3 tablesp salt in 1 cup vinegar. Soak the spots in this mixture and expose to the sun. 5—Rub white goods with soap, then wash out, in an hour, as usual. Or, saturate spots with salt and lemon juice in equal parts, and expose to sunshine. Repeat until clear.

MILK—If fresh, may be washed out of any fabric in cold water. Never use hot water first. The same is true of milk utensils. The cold bath may be followed by hot soapsuds and a final clear rinse.

MUD—If unremovable by dry rubbing, use 1 teasp carbonate soda in 1 pt water. Wash out stains and dry quickly. 2—From dark dresses or clothing: If it will not brush off, try rubbing spots with raw potato, cut in halves.

OIL—From carpets: When oil has been spilled on a carpet, the latter must be loosened and the floor below well scrubbed with soap and water and fuller's earth. Also scatter the latter freely over the carpet, and then brush out. 2—To remove machine oil from white goods: Use tar soap, rubbing it in well with hands. Rinse out and hang in sun and air to dry. 3—From white and fast colored goods: Mix 3 oz spirits of turpentine and 1 oz essence of lemon. Apply to spots liberally. After drying, launder as usual.

PAINT—Equal parts of spirits of turpentine and ammonia will remove paint spots from white clothing and any washable goods. Saturate spots, let stand, and then wash with warm soapsuds. Or, apply to the paint with a bit of cloth the same color as garment. Rub gently the way of the nap until paint is gone. Then sponge with warm water and a little white soap. 2—From flour sacks: Rub soft soap over paint on dry sacks, then soak in hot soapsuds and leave until next day. Wash and boil in usual manner. 3—From hands: Rub with turpentine, kerosene, grease or butter, then wash in warm soapsuds. 4—To remove dry paint from window glass: Put some baking soda on a cloth and rub spots, or rub off with a penny. Almost any good washing powder on a damp cloth will remove such spots, and if obstinate, try kerosene oil or turpentine. 5—To remove dry paint from delicate colored goods, where the spots are of long standing: Saturate the spots with sweet oil, leave for an hour, then

clean by dipping spots in chloroform and rubbing them carefully. Finally, with a clean cloth wet in chloroform, rub from outside toward center of spot, to prevent a ring. Where colors are not delicate, turpentine may be used and oil and chloroform omitted. The turpentine may also be used alone on white goods spotted with paint. 6—Fresh paint spots may be removed from unwashable goods by washing the spot in kerosene oil and hang the garment in a current of air until it evaporates. Benzine and naphtha will also remove the spots, but are very inflammable and must not be used near lamps or fires.

PEACH—From white goods: Use a weak solution of chloride of lime, applied often. Solution may be 1 tablesp lime in 3 qts water. 2—Sometimes a little alcohol rubbed on spots, allowed to evaporate, and then more applied, will be effective, but javelle water must be used to get rid of fixed stains.

PLUM—From white and washable goods: Soak in javelle water. Sometimes, if not found until late in the season, the spots may be wet with tepid water and hung out in the frost. Repeat until stains disappear.

PERSPIRATION—Lay the stained spot on blotting paper, and sponge with ether and alcohol, equal parts, mixed. If a blurred place is left, rub it with powdered French chalk on the wrong side. The blotting paper prevents a ring from forming around cleansed spot. This is for all washable goods. 2—To remove perspiration from colored goods, use boiling water, but if the goods are delicate or this method fails to remove the stain, wash with sweet milk and salt (1 tablesp salt to each pt milk), and let goods soak in the mixture for several hours. If the goods are not very delicate, let the milk sour on them.

PITCH—To remove pitch, tar, or wheel grease from any kind of goods, rub lard or butter well into the stain, let stand ½ hour, then scrape off carefully. Repeat if necessary, then wash in warm water with plenty of soap.

RUST—From washable goods: Fill a large bowl with boiling water. Have another filled with hot water. Place the spotted parts over the hot water. Wet a cork with muriatic acid and touch each spot with it. They will turn bright yellow. Dip in the boiling water, and they will vanish. Rinse in several waters. In the second rinsing put a tablesp liquid ammonia, to neutralize any trace of acid remaining. Two oz muriatic acid will remove a large amount of rust. Do not keep it in tin.

SCORCH—From white goods: Soak in lukewarm water and squeeze lemon juice over spots. Sprinkle with salt and place in sun to bleach. 2—Spread out scorched article in the

sun, on a chair in window will do, and keep it in the sun until spots disappear. It may take several days.

SHOE—To remove leather stain from white stockings or skirts: Dilute ½ oz oxalic acid in 1 pt water. Wash and rinse thoroughly, or the acid will leave traces.

SHOES—Stains may be removed from tan shoes by washing them with soap and water, before applying the polish.

SMOKE—From walls and ceilings: Wash dirty whitewashed walls or ceilings, where new coating is undesirable, with cloths wrung out of tepid soda water, 1 teasp washing soda to 1 qt water. Ammonia water is also good.

SOOT—If soot falls on a carpet, cover thickly with salt. Brush it up carefully. Do not spread it over any clean surface. If not enough salt is at hand, use some flour.

SILVER—To remove stains from silver, steep it in weak soap lye for four hours. Cover then with whiting, wet with vinegar, so that it remains thick upon silver. Dry by a fire. Rub off all whiting, and then scour with dry bran or any prepared silver polish. Soaking in buttermilk will also remove stains from silver.

TAR—From carpets: Tar is soluble in fats and especially in butter. If butter is left on the tar for several days, both can be scraped off and washed out with soap and water.

TEA—These are hard to remove. Sometimes they reappear and necessitate several treatments. Soak them in a solution of cold water and borax, in equal parts, and then pour boiling water slowly through them. 2—From white goods: Mix 1 tablesp salt in 1 cup soft soap, rub on the spots, and lay articles on grass to bleach. Wet spots occasionally while on grass. After two or three days send to laundry.

VARNISH—From any material except silk or very delicate fabrics: Saturate with spirits of turpentine. Let dry and rub out with benzine, keeping it always away from fire and flame.

VASELINE—From towels and clothing: Soak in kerosene or alcohol before washing with soap and water, which, alone, would set the stains. 2—Soak these stains in kerosene before washing. If goods are too nice to be used this way, clean with chloroform by wetting the spots with this substance and rubbing well.

WATER—To remove water stains from lavatory basins: Powdered whiting mixed with a little liquid ammonia will remove bad stains. Ordinarily one need only rub with a rag wet with kerosene or spirits of turpentine or benzine.

WALNUT—Rub with slices of sour apple or lemon, then wash in clear water. Soap will set the stain.

WAX—Use kerosene, benzine or naphtha, being careful to never use near fire or flame.

WINE—Cover with damp salt and lay in sun and dew. Repeat if necessary. This is for any kind of goods. 2—From linen: Rub both sides of stains with pure soap; then lay on thickly a mixture of starch and cold water, in equal parts. Rub in well and then expose to sun and air. 3—Stretch the stained part over a basin and rub with salt, then pour boiling water over it until the stain is gone. This is for colored and white goods. 4—From linen: Dip the stained parts into boiling milk. Keep the milk boiling until stain disappears, then launder as usual.

For Additional Memoranda

Care of Lamps and Stoves

How to Get Best Results

N a winter's night, when lamps burn bright, and you get up from a well-cooked dinner and, with a paper or book, settle down beside the cheerful warmth of a clear, crackling fire, what matters it if the appointments of your home be humble, and the chill storm rages without? You may enjoy solid comfort, because of the bright lights and well-burning fires. These, in turn, mean good lamps and good stoves, and they certainly do play important parts in domestic affairs and are well worth careful attention, since to make your family comfortable is to cause them to become good-natured, and when they're good-natured they're happy, and when they're happy they're good. Seemingly small trifles have a way of merging themselves into large results.

About Lamps and Lights

Good, bright lights are not a luxury, to be enjoyed by a few; they are an absolute necessity for all who do not "go to bed with the chickens," and all may enjoy them, provided the initial investment in lamps was wisely made, and the housekeeper understands the care of lamps.

In the first place, get good lamps. They are the most economical in the end. By good lamps is not meant fancy or ornamental lamps, but lamps that are constructed on correct scientific principles, economical fuel burners and easy to care for. A study of advertisements in reliable papers, and careful reading of the lamp literature with which the adver-

tisers will supply you upon request, will help you to make wise choice. Put your money in a practical lamp, and eschew the ornamental which has nothing else to recommend it. The following items may offer some helps and suggestions to the home-maker, who has the comfort and welfare of her family at heart:

To Test the Oil

The quality of oil burned in lamps is highly important. Only the best astral oil will give bright and soft lights. The oil should be clear and light, like water. To test it for adulterations, proceed as follows:

Into a flat plate or saucer pour a little of the oil, to a depth of about half an inch, then hold a burning match or paper near the surface. If the oil is adulterated, as soon as the light touches the surface a blue flame flashes across it, and in a few moments the body of the oil will be on fire. Such oil is dangerous, liable to explode in lamps, and to give off inflammable vapors at all times. It should not be used. Needless to say, the above test should be carried on out of doors, to insure safety.

Wicks and Burners

Much, also, depends upon the wicks and burners. The former must fit exactly and be neither too thick nor too thin. If too thick, pull out a few threads; if too thin, sew a layer of flannel to the wick. The wicks will burn more evenly and brightly if, when new, they are soaked in vinegar over night and then dried thoroughly. The holes in the burners must always be kept open—free from dust or smut—to secure ventilation and proper combustion. It is a good plan to boil them once or twice a month in sal soda water. Keep the wicks clean by using clean, filtered oil.

Chimneys and Shades

Here again, the best is the cheapest. Poor glass cracks and breaks easily. The chief cause for breakage, when it is not carelessly handled, is the contraction or expansion, due to changes from heat to cold, and vice-versa. To toughen glass, put the new shades or chimneys (provided the former are not painted) in cold water to cover and place on the fire where the water may heat gradually and come to a gentle boil. Then put on back of stove or remove from fire and let cool gradually. The glass may then be wiped dry. Another method of treating chimneys is to make two opposite, oblong cuts on the convex sides, with a diamond. This will permit

expansion or contraction, it is said. When a lamp has been standing in a cold room, the chimney should be warmed slowly and gradually by keeping the flame low, when the lamp is lighted, and later turning it up to the desired hight. Avoid cold drafts.

To Fill and Trim Lamps

Have a regular time for filling and trimming lamps, preferably in the morning, and attend to this duty faithfully. Never wait until evening and then fill and trim lamps in a hurry. Remove chimneys and place lamps in a row, then fill them all at one time, using a funnel to pour in the oil, so that none may be spilled. Screw in the caps, and then open the top of burners to trim the wicks. This should never be done by cutting. With a rag rub off the charred portion of the wick, having the latter even with the wick guard, then, if necessary, use scissors to trim off any straggling threads or unevenness. Wicks should be trimmed absolutely straight, and the corners may be very slightly rounded. After trimming, turn down the wick so it will be at least a quarter inch below the top of the wick guard. This is important, to prevent the oil from oozing out over the lamp, which, when lighted, would give off a bad odor. Next clean every part of the burner carefully, using a different rag from that which was used to clean the wick. To insure good combustion and a clear light, it is important that the burner be perfectly clean and all the little holes free from clogs. Next thoroughly wipe the outside of the lamp with another rag, and then clean the chimneys by holding them over the steam of a kettle and drying with a clean, soft rag. The final polishing may be done with another rag, free from lint.

Put each lamp in its own place and have matches, match-scratcher, and burnt match receiver hung conveniently near. Careful attention to these details avoid confusion and insure comfort and safety. The lamp cleaning and trimming paraphernalia should be kept all together in a partitioned box, punched with plenty of air holes. Many a fire has started by spontaneous combustion among old oily rags. Burn the rags as soon as they become oil soaked.

To Clean the Inside of a Lamp

Pour out the oil through a filtering cloth, and set aside to use again. Put 1 teasp sal soda in the lamp and fill with warm water. Let this stand a few minutes and then, if you have no small brush on hand, such as is used to clean chimneys, drop in a few hard beans or pebbles and shake vigorously. Bird gravel or sand, combined with warm water

and soda, are also good to clean the inside of a lamp. Rinse and dry thoroughly.

To Extinguish Lamp Fire

When a lamp is dropped or overturned and catches fire, don't attempt to extinguish the fire with water, which would only cause the burning oil to spread farther. Smother the flames by throwing on salt, sand, ashes, or flour.

To Prevent Lamps Exploding

The cause of explosion may be usually attributed to allowing the oil to get too low in the lamp. The vacuum is then filled with gas and when the lamp is moved about an explosion occurs. Other causes for explosion are neglect to remove the charred portion of the wick and to clean the burner thoroughly. Bad or adulterated oil is another prolific cause.

To Repair Lamp Chimneys

Apply a little carriage varnish with a feather to the crack in chimney and then burn it upon the lamp several evenings before washing it. The heat makes it very hard and durable, though it discolors the chimney a little. This is a good emergency help, when it is not convenient to secure a new chimney.

Homemade Lamp Wicks

Take a strip of canton flannel three times as wide as you wish the wick to be, and of the usual length. Fold it with the fleecy side in, so that it will have three thicknesses, and baste or overcast it up the side. This is a great convenience when a new lamp wick is needed and there is no time to buy it.

Don't Turn Down the Wicks

Many people, when burning night lamps, are in the habit of turning down the wicks. This is all wrong. When the light of the lamp is turned down low the combustion is not perfect and the atmosphere will become vitiated by the unconsumed oil vapor, by the gas produced by combustion, and by particles of smoke and soot thrown off. All this will be taken into the lungs by the occupants of the room. Air thus poisoned is deadly in its effects and accounts largely for mysterious headaches, irritation of throat or lungs, dizziness, nausea, etc.

Cement for Mending Lamps

A cement particularly adapted for attaching the brass work to glass or porcelain lamps is made by boiling 3 parts resin with 1 part caustic soda and 5 parts water. This composition should be mixed with half its weight plaster of paris. It will set in about ½ to ¾ hour. Zinc, white lead, or precipitated chalk may be substituted for plaster, but they harden more slowly and are not quite as satisfactory as plaster of paris. Another way is to mix liquid mucilage with enough plaster of paris to make a good cement. Still another is melted alum, which sets as soon as it cools.

Oil Stoves and Heaters

Every suburban housekeeper who cannot command the convenience of gas or electricity ought to have an oil stove with which she may cook and bake during the summer months, when it is sheer cruelty to expect her to do such work on a coal range, with the thermometer in the hundreds. There are all sorts of oil stoves on the market—good, bad and indifferent. Naturally, it pays to get the best. The latest pattern is a blue flame with a wick, the wickless blue flame oil stoves not having proved universally satisfying. Every stove is accompanied by plain printed instructions for handling, which should be carefully followed. For the rest, cleanliness is essential to obtain satisfactory results. Many women manage to do all the baking, cooking, washing and ironing on oil stoves during the hot summer months. Oil heaters are also great conveniences, especially in country houses that are not equipped with modern heating apparatus. They heat up a room in five minutes and make comfortable dressing possible in bedrooms not heated by stoves. They should be cared for according to the maker's directions.

To Save Oil

In using an oil stove with two burners, place a piece of sheet iron large enough to cover the stove over the burners. Then turn on one burner. There will be heat enough to cook with, placing the article needing the most heat directly over the burner.—[E. P., Mass.

Care of Gasoline Stoves

Never let a gasoline stove burn dry. Keep the burners clean. After each meal clean them with a tooth brush. Neglect invites danger and causes bad odors.—[Mrs D. A. S., Cal.

To clean a gasoline stove of dust, use a bicycle foot pump. Insert end of rubber tube in each burner and pump by hand, and the dust and ashes just fairly fly.—[Mrs B. H., Iowa.

How to care for all gasoline and oil stoves: First, be very careful not to overflow them when filling. Second, always have an improved dry powder fire extinguisher hanging within ready reach, in case they do behave unseemly.—[F. M., Me.

About Lanterns

It is much more advisable and safe to use lanterns when going to the cellar or attic after dark than to carry lighted candles or lamps, or matches to strike at random. Such practices have caused many fires and great loss of capital. Have a number of lanterns always ready for use. Care for them the same as for lamps. Have a little lantern for the children to take with them when they go up to bed alone. Many a distressing accident could be thus avoided.

Miscellaneous Hints

Wash all your lamp chimneys in your warm, clean dishwater, before putting the dishes in. They are so easily cleaned this way every morning, in about three minutes, when, if neglected for two or three days, one must wash and polish for 15 minutes to get them clean. I rinse my chimneys in hot water and when they become accustomed to the heat you will have no more trouble with their breaking with cold and drafts.—[Mrs R. B. H., Iowa.

To clean kerosene lamp burners, place about 1 pt water in an old tin can on the stove. Add 1 tablesp each of caustic soda and powdered borax and boil the burner for half an hour thoroughly. When this has been done, clean off the burner with a bit of cloth. With a hairpin or small wire push a piece of cord through the little flue that supplies air to the wick, and draw back and forth, so as to remove all clogging dirt.—[W. H. G., La.

If the burners are boiled in the water in which beans were parboiled, they will be bright and clean, and will burn as good as new.—[Mrs C. L. W.

Put a small lump of camphor gum in the oil reservoir of the lamp when you want a nice, bright light.—[B. E. S., Ore.

About Stoves

A good stove, for cooking or for heating purposes, is one of the best investments the householder can make. The saving of time, material and temper will more than make up for the initial cost. Having secured a good stove it needs

be kept in good condition. This is best secured by thorough cleanliness, and careful handling of all parts. Get acquainted with your stove, find out the drafts and dampers, and use common sense in handling it.

Making Fires

It would seem as though no housekeeper worthy of the name need be told how to build a coal fire in cook stove or heater, and yet it is a fact that many otherwise competent women never succeed in getting up a good fire to bake or cook, without much "coaxing" and waste of time. If the stove and chimney are in proper condition, good fires can be quickly and easily built by following these directions: Have grate clean, empty out ashes, open all drafts, put in a good layer of crumpled paper (some greasy paper is good) and pack it down well, but not too tight; over this put fine, dry kindling and a few "fire kindlers," if you have them, though the latter are not necessary; then put on the larger kindling, packed pretty closely, and after putting the lids in place, apply a lighted match to the first layer of paper, through the grate openings. When the fire blazes up well and the wood has caught, put on more wood, pack down closely, and add a thin layer of small coal. After this has ignited, add more coal, and in a minute or two turn off some of the drafts, finally adjusting them all, so the fire will have neither too much nor too little draft.

Sickroom Fires

To make a noiseless fire, in the room of an invalid, put the coal in paper bags, and lay one bag at a time in the grate. Thus a fire can be kept up not only noiselessly, but without dust or dirt. Dampen the ashes well before removing and wipe dusty places with a damp rag. When the fire must be shaken down, do it slowly, a little at a time.

To Keep a Fire

If you are leaving your house for a few hours, and want the fire to keep, instead of throwing in a lot of coal, it is much better and safer to put a few pieces on, and then throw a handful of table salt over them. If this is done, you will find a good fire at the end of four or five hours.—[J. I., Neb.

There must be a good fire when you are ready to bank it up for the night. Turn on all drafts, poke or shake fire until it is clear, put on coal packed tightly and evenly, and after a few minutes put on a layer of cinders and ashes. When the little blue flames are seen to leap through the ashes, turn

off drafts, one at a time, and adjust for the night. In the morning turn on all drafts and after a few minutes put on coal.—[A. G., Mass.

Clinkers

Clinkers are really due to carelessness. If a stove is properly managed and never allowed to get white hot, there will be no clinkers, which are unconsumed aggregations of mineral matter fused from the coal. The remedy is quicklime in its proper form, or as oyster or clam shells. Put the shells—which are preferable—over the very hot fire, and let them burn up. If quicklime is used, be sure the lumps are well burned and not too big. Shells make the fire hotter—quicklime has a tendency to put out the fire, if used too liberally. The clinkers should come away with the ashes or be easily removed from the grate, but if not, burn shells again and again, until clinkers are gone.

To Economize on Coal

This is a good way to keep down the coal bills and use up quantities of waste paper: Put the paper into a pail of water, let steep a little; then squeeze into loose balls. Put these on a clear, low fire of cinders or coke. On the balls throw coal dust mixed with cinders. Leave the fire untouched for hours. When poked, it lights up into a warm, glowing fire. This is a splendid way where fire is to be kept all night.—[B. E., Ore.

To Keep the Chimney Clean

Those who have trouble with the chimney becoming filled with soot will find a remedy in potato parings. Instead of throwing them in the garbage can, burn them every day, and there will never be any trouble with the collection of soot. If the chimney is badly filled up, throw a few scraps of zinc on the fire when it is very hot. This will clean it out, and the potato parings with them keep it so.—[Mrs H. M. W., Ill.

Fire Kindlers

Melt together 1 qt tar and 3 lb resin, and when cool mix with as much sawdust as can be worked in, adding also a little charcoal. While still warm, spread out upon a board, and when cold break up into lumps the size of a small egg. This will give you at very small expense kindling material enough for an ordinary household for one year. It easily

ignites from a match and burns with a strong blaze.—[Mrs J. C., N Y.

Buy a dozen cheap candles and cut them into two-inch bits. Put one of these bits in among the kindlings and light it. It will burn safely until the wood is strongly ablaze, and there is no danger of an explosion.—[C. T., Va.

Dip dry corn cobs or splinters of wood into a mixture of resin and tar, and dry for use. Or, stand the dry corn cobs or splinters in an old tomato can filled with kerosene. Keep can away from the fire.

A Fuel Saver

Mix together 1 bushel each of small coal (coal grit and dust) and sawdust, 2 bushels sand and 1½ bushels clay. Mix these together with water, like ordinary clay. The more this is stirred and mixed together, the better. Shape into balls or bricks and let them dry. When hard they are ready for use. A fire cannot be lighted with these, but when the fire is lighted, put two or three on behind, with some coal in front, and the fire will last much longer than ordinarily.

Bricks for Keeping Fire

Mix together 1 part of coal, charcoal or sawdust, 2 parts of sand and 1 part of marl or clay. Mix with water to the proper consistency, and make into bricks or balls of a convenient size, and let dry. When the fire is sufficiently strong, place some of these bricks a little above the top bar. They will produce a heat a great deal more intense than common fuel, and cause a saving of coals. A fire thus made up will keep for ten hours or longer.

About Stove Blacking

Many housewives have some favorite blacking which they prefer to use to bothering with a homemade composition, but there may come a time to even the most careful housekeeper when she will need a polish which she can make herself, and, if so, there will certainly be some one among the following that will prove a "friend in need." Blackings should be kept cool and dry and tightly corked.

Stove Polishes

Mix together 1 lb black lead, 2 lb copperas, and 1 lb bone black. As the copperas comes in crystals it must be ground to a fine powder. The three ingredients are then well mixed. For use, add enough water to a little of the powder to make

the liquid about the consistency of cream. Apply to the stove in the usual way and brush briskly. A lustrous and durable polish is obtained. There is no better article on the market. [F. E. F., O.

Mix the beaten whites of 3 eggs with ½ lb finely powdered black lead; dilute with sour beer or porter till it is as thin as cream. Simmer for 20 minutes. When cold, it is ready to use.—[E. P., Mass.

Mix black lead with white of egg to a molasses consistency. Put on with a small paint brush, and polish, when dry, with a heavy brush.—[No Name.

Mix together in a stone jug 1 gal vinegar, 1 lb powdered ivory black, ½ lb sugar, ½ oz oil of vitriol, and 6 oz sweet oil. Cork well and shake before using.—[Mrs Z. T. T., N C.

Mix well together 4 oz powdered ivory black, 6 gills vinegar, 1 tablesp sweet oil and 2 tablesp molasses.—[A. S. B., Mass.

Stove luster, when mixed with turpentine and applied in the usual manner, is blacker, more glossy and more durable than when mixed with any other liquid.—[R. K., Neb.

Mix the commercial stove blacking with soapsuds or vinegar, instead of water. It will polish better and won't be so dusty.—[A. G.

To blacken a stove while there is fire, let it go down some, then sweep off the top of stove, put a little old lard or grease on a newspaper and rub briskly. This blackens it nicely, and takes but a few moments after dinner.—[R. M. H., Mass.

Polish for Stovepipes

Mix 1 part turpentine with 1 part linseed oil. Apply with a cloth while pipe is slightly warm.—[L. L., Can.

Stove Cement

Take 1 part salt and 2 parts each of wood ashes and clay. Mix stiff with water. This will temporarily fill cracks in stoves or pipes in emergencies needing such aid. Apply and allow to harden while stove is cold.

A good fireproof cement for iron is made by mixing finely pulverized binoxide of magnesia with a strong solution of silicate of soda (water clay) so it forms a thick paste. After filling the cracks, heat the stove slowly.—[E. P., Mass.

Miscellaneous Notes

Mica in stoves, when smoked, is readily cleaned by thoroughly washing with vinegar a little diluted. If the black does not come off at once, let it soak a little.—[Mrs H. K., Neb.

Wear gloves when you black and polish stoves, or, if you can't do that, then grease your hands well, around fingers, nails and all, before touching the blacking. It will then wash off easily.—[A. G., Mass.

Dry potato peelings mixed with the kindling wood makes the fires light easily.—[Bertha Evans, Sandy, Ore.

If the range is wiped carefully with newspaper after every cooking or frying of greasy food, it can be kept bright with only one blacking a week.—[Mrs J. C., N Y.

The Cause of Chimneys Smoking

Smoking chimneys are the result of various causes. The chimney may not be tall enough or not properly constructed at the arch, or the flue may be clogged, or there may be openings along the chimney which lessen or destroy the draft, or the flue may be too narrow at the top, or there may be some partitions in the chimney that obstruct the drafts. Chimneys should be tall enough to out top any roof ridge or building nearby. If a fireplace is used, the flue should be large enough to allow free escape of smoke and gases. The flue should always be kept clear. If the flue is narrow at the top, the tendency is to drive the smoke back. If anything, the upper portion of the flue should be a trifle larger than the lower, but never smaller. If salt is mixed with the mortar which is used in building the chimney, the accumulation of soot will be prevented. The salt absorbs the moisture every damp day and imparts it to the soot, which thus becomes heavy and falls down into the fireplace. A remedy for a chimney on fire is plenty of salt.

How to See Up a Chimney

Place in the hole of the chimney wall into which the stovepipe is to go, a piece of mirror inclined at 45 degrees. If you can see the light of the sky you will also see the whole interior of the chimney and any obstruction in the same.

To Make Matches Waterproof

It is said that friction matches can be made perfectly waterproof by dipping them in a solution of 2 parts glycerin and 100 parts collodion.

For Additional Memoranda

Home Made Polishes

For Leather, Furniture, Harness and Carriages

OLISHES and cleansers should always be on hand and used liberally. They are labor-savers. In domestic economy our hard-working great-grandmothers used to accomplish much in this branch by the use of what they termed "elbow grease." That lubrication may be still a very necessary adjunct to a good polish, but the work can be made easier by calling upon the assistance of some one of the many excellent recipes that follow.

Metal Polishers and Cleansers

Mix ½ pt refined neat's-foot oil and ½ gill spirits of turpentine. Wet a woolen rag with this mixture, then dip the rag into powdered rotten stone, and rub well over the metal. Wipe off with a soft cloth and polish with a dry chamois skin.

When iron seems hopelessly rusty, scour it with salt moistened in scalding vinegar; soak it for 24 hours in kerosene oil, then dry and vigorously rub with a flannel cloth dipped in sweet oil.

If new tinware be rubbed over with fresh lard and thoroughly heated in the oven before it is used, it will not rust afterward, no matter how much it is put in water.—[F. E. F., O.

Use finely sifted coal ashes to polish tinware. Apply with a damp cloth. Also good for polishing steel knives and forks.

To make old tinware look like new, put it in a boiler and cover with water to which you have added about a tablesp of lye, more or less.

To clean pewter ware, mix 1 lb neat's-foot oil with 1 oz aqua ammonia and enough powdered rotten stone to make a thick paste. Rub with the paste and polish with a rag.

The water in which common white beans have been boiled will cleanse brass not very badly soiled. A mixture of vinegar and salt will do the same, but the salt must be fine and thoroughly dissolved in the vinegar, or it may scratch the brass.—[M. H., S D.

Half a lemon dipped in salt will do all the work of oxalic acid in cleaning copper boilers, brass teakettles and other copper and brass utensils.—[F. T., N D.

Badly tarnished brass may be cleaned with ease if it is first rubbed with salt and vinegar, or oxalic acid. Follow with a good washing of soap and water, then polish with any good cleaning preparation.—[F. E. F., O.

Finely rubbed bichromate of potassa, mixed with twice its bulk of sulphuric acid, and an equal quantity of water, will clean the dirtiest brass very quickly.—[M. A. J., Wis.

This is a good powder to polish brass and copper: Thoroughly mix 3 parts powdered rotten stone and 1 part powdered white soap. When wanted for use, moisten with water.

To cleanse bronze, dust it carefully, then wipe it with a soft cloth moistened with sweet oil. Polish with a soft chamois skin.—[F. T., N D.

Silver Cleansers and Polishes

Mix ½ oz fine salt, ½ oz powdered alum, ½ oz cream of tartar, and pour on 2 qts water. Stir frequently, until dissolved. Place the mixture in clean bottles and cork closely. When using, shake well. Pour some of the liquid into a small bowl and wash the silver with it, using an old, soft linen cloth. Let it stand ten minutes and then rub dry.

To 1 qt soft water, add 2 oz ammonia and 3 oz precipitated chalk. Put in bottles, keep well corked and shake before using.—[C. T., Ia.

To keep silver as bright as new, without scratches, make a strong solution of sal soda and boiling water. Drop the silver in this, then take out and wipe dry and you will have accomplished the work of hours of scouring.—[C. B., N H.

Dissolve a quantity of alum in water, so as to make a pretty strong brine. Skim it carefully, then add some pure white soap to it. Dip a flannel rag in this and rub the silver until it shines to suit you.

To Polish Gold Jewelry

Powder some whiting and make it into a moist paste with some sal-volatile. Cover the gold ornaments with paste, using a soft brush, and let it dry. Then brush it off with a moderately hard brush. To polish gold chain, put it in a glass bottle

with water, soap and finely powdered chalk. Shake well, then rinse in clear, cold water and polish dry with soft flannel or silk.

Boots and Shoes

If boots and shoes receive proper care they will last much longer than they usually do, and at the same time fit the feet better and keep them more comfortable during inclement weather. The upper leather should be kept soft and pliable, while the soles should be hard, and as far as possible waterproof. Boots and shoes should be cleaned frequently and should never be allowed to stand in a damp place, nor to be put too near the fire to dry. In cleaning, be careful to brush the dirt from the seams, and do not use a knife for this purpose, which is likely to cut the stitches. Do not put on too much blacking at a time.

To Oil the Soles of New Shoes

Set each new shoe on a platter or dinner plate and pour onto the plate enough boiled linseed oil to reach the upper edge of the soles. Allow the soles to absorb as much oil as they will, for about eight to ten hours. The linseed oil should never be applied to the upper leather, as it would render it hard and tough, but if the soles be saturated with this oil, it will exclude the dampness and also enlarge the pegs. Treated thus the soles will not get loose from the upper leather. Also, if the shoes be sewed, the linseed oil will preserve the thread from rotting. This treatment will also prevent the shoes from squeaking.

To Break in New Shoes

After the soles of new shoes have been treated as directed, put the shoes on the feet and wet the upper leather thoroughly. Keep them on the feet until they are dry. In this way the parts which are tight stretch, and the shoes will conform to the shape of the feet, making it easier to wear them thereafter. After the shoes have dried, give the upper leather a thorough greasing with equal parts of lard and tallow, or tallow and neat's-foot oil. Treated in this manner, and with a row of round-headed shoe nails driven around the edge of the soles and heels they will wear twice as long as usual.

To Dry Shoes

When shoes have been thoroughly soaked by rain or snow, do not put them near the fire to dry. Wipe them as dry as

possible with a soft cloth and then stuff the shoes full of Indian, or corn, meal. Set them away in a dry, warm (but not hot) place for 10 to 15 hours; then remove the Indian meal and grease the uppers well with a mixture of tallow and lard, and wipe clean.

To Make Boots and Shoes Waterproof

Take 4 parts of spermacetti and 1 small part of India rubber. Melt with gentle heat, then add 10 parts of tallow or lard, and 5 parts of amber or copal varnish. Mix well and apply the composition to the leather with a paint brush. The rubber should be cut into very small pieces and allowed plenty of time to dissolve—about five to six hours. A coat of gum copal varnish applied to the soles of boots and shoes and repeated as it dries, until pores are well filled, will make the soles waterproof.

Another waterproof composition is made as follows: Melt 3 oz beeswax with the same quantity of resin, then add 1 pt boiled linseed oil. Stir well together, let it boil up, remove from the fire, and add 3 oz oil of turpentine. A more simple formula is melted beeswax and mutton tallow.

Farmers and gardeners, from the nature of their work, are often exposed to wet feet. Some object to greasing shoes for the purpose of keeping them soft, saying it causes the leather to rot, and so makes it more pervious to dampness. My own experience has not confirmed this view, and I give a formula used by an old New England fisherman in his trade for over seventy years: Boiled linseed oil, 1 pt; mutton suet (fresh), ½ lb; yellow beeswax (clean), 6 oz; yellow resin, 4 oz. Melt and mix well, apply with soft brush, warm, but not so hot as to shrink the leather. With shoes so treated, you can stand in water for hours and your feet will not be damp.—[F. M. F., Me.

To Clean White Canvas Shoes

Stuff the shoe with cotton wadding so there will be no creases. Mix some pipe clay with water to a stiff paste. Wash the shoes with Ivory soap and water, and a nail brush, using as little water as possible to get the dirt off. When the shoes look tolerably clean, dip a piece of damp flannel in the pipe clay and rub well over the shoes, after which hang them out to dry. When dry, beat out the superfluous clay and wipe the shoes carefully.

To Restore Kid Shoes

Mix a small quantity of some good, black ink with the white of an egg, and apply this mixture to the shoes with a soft

sponge. Wipe with a flannel rag. To soften kid shoes, applying a small quantity of the following occasionally with a piece of flannel is fine: To ¼ lb melted tallow add ¼ lb olive oil; stir well. Use in very small quantities.

To Renovate Patent Leather

If patent leather shoes have cracks, brush a little blacking into the cracks, and then rub them over with French polish or common furniture polish, and finish off with a soft, dry rag. If no furniture polish is at hand, a mixture of sweet oil and turpentine will answer.

A nice polish for enamel leather is made as follows: To 2 pts thick, sweet cream add 1 pt linseed oil. Make them each lukewarm and then mix them well together. Before applying, clean the shoes and then rub them over with a sponge dipped in the mixture, after which rub with a soft, dry cloth until a brilliant luster is produced.

About Leather Blackings

Both liquid and paste blackings should be stored in a cool and moderately dry place, and when in use should be kept corked or otherwise excluded from the air. Exposure to the air destroys its best qualities. Blackings containing vitriol in quantity are more or less injurious to the leather. The manipulations required in the manufacture of both paste and liquid blackings are essentially the same, the difference between the two articles depending mainly on the quantity of liquid. By diluting paste blacking with weak vinegar or stale beer, it may be converted into liquid blacking, and by using less fluid matter, the ingredients of liquid blacking will produce paste blacking. The ivory black used for liquid blacking should be a much finer powder than that used for paste blacking, as otherwise it is apt to settle at the bottom of the bottle and not readily mix with the liquid.

Luster Shoe Polish

Mix the whites of 2 eggs with 1 tablesp pure alcohol and 2 teasp powdered sugar. Add enough finely powdered ivory black to impart the required color and thickness, but be careful not to use too much. Apply to the shoe with a sponge or soft brush, and when almost dry polish with another brush or a cloth. This polish is best adapted for shoes for indoor wear, for if exposed to the elements, it is liable to crack off.

Polish for Morocco

Pound some black sealing wax and put in a bottle with alcohol. Shake frequently, and when dissolved, apply to the shoes. Let dry in the sun.

The coverings of chairs or sofas in morocco, roan or skiver can be much improved by this reviver. If old and greasy, wash with sour milk first. The reviver should be applied with a piece of wadding and wiped one way only, as in glazing. The color can be matched by adding red sanders. To ½ pt alcohol add 2 oz gum benzoin, and ½ oz shellac. Mix and shake up occasionally, until dissolved.

Liquid Blacking for Shoes

Mix together ¼ lb ivory black, 6 gills vinegar, 1 tablesp sweet oil and 2 tablesp molasses. Stir the whole well together and apply with a sponge, first cleaning the shoes.

To 1 gal vinegar add 1 lb pulverized ivory black, ½ lb loaf sugar, ½ oz oil of vitriol and 7 oz sweet oil. Another recipe calls for 12 oz each of ivory black and treacle (molasses), 4 oz spermacetti oil, and 2 oz white wine vinegar. Mix thoroughly. As this contains no vitriol, it will not injure the leather.

Mix 2 pts vinegar and 1 pt water, then stir into this ¼ lb glue, broken fine, ½ lb logwood chips, ¼ oz finely powdered Indigo, ¼ oz best soft soap, and ¼ oz isinglass. Boil 15 minutes, then strain, bottle and cork. Remove all dirt from shoes and apply polish cold, with a clean sponge. If too thick, thin by holding near a fire.

Waterproof Blacking

Melt 3 oz beeswax and 3 oz black resin, stir in 1 pt boiled linseed oil and 1 oz lampblack. When cooled, stir in 3 oz oil of turpentine. This is a good mixture for boots and shoes much exposed to rain, snow and dampness.

Care of Harnesses and Carriages

Mud and dust are highly destructive to harnesses and carriages, or, in fact, any leather goods. The pores become clogged, the luster is deadened, and the life of the leather is destroyed. Harnesses and vehicles should be cleaned after each use, as soon as possible. Warm suds are best. Use mild soap and a sponge. Rinse with clear water and wipe dry with soft cloths. Never allow leather goods to be exposed to sun rays when not in use. Always secure loose bolts at once, and permit no unnecessary friction or rattling.

Improve each rainy day by applying yourself to the care and renovating of leather goods on the farm.

Harness Blackings

To 2 oz mutton suet add 6 oz pure beeswax, 2 oz soft soap, 2½ oz lamp black, and ½ oz finely powdered Indigo. When thoroughly incorporated by gentle heat, remove from fire and thoroughly mix in ¼ pt oil of turpentine.

Mix together 4 oz melted mutton suet with 12 oz beeswax, then add 12 oz sugar candy and 4 oz soft soap dissolved in water, and 2 oz finely powdered Indigo. When melted and well mixed, remove from fire and add ½ pt oil of turpentine and mix well. Apply to the harness with a sponge and polish off with a brush.

An excellent blacking is made by heating to boiling point 4 oz hog's lard, 16 oz neat's-foot oil, 4 oz yellow wax, 20 oz ivory black, 16 oz brown sugar, and 16 oz of water. When cool enough to handle, roll into balls.

Mix 1 lb beeswax, 6 oz soft soap, ¼ lb ivory black, 1 oz Prussian blue, 2 oz linseed oil, ½ pt turpentine. Melt and pour into tins or jars.

Soften 2 lb glue in 1 pt water. Dissolve 2 lb soap in 1 qt warm water. Melt the soaked glue and turn into a large pot. Place the pot over a hot fire and turn in the soap water, stirring slowly. When well mixed, add ½ lb yellow wax, cut in pieces. Boil until wax is melted, then add ½ pt neat's-foot oil and lamp black enough to give it color. Let it boil again five minutes and it is done.

Dissolve by heat 4 oz gelatin or glue and 3 oz gum arabic, in ¾ pt water. Add 5 oz molasses and 5 oz finely powdered ivory black. Gently evaporate to proper consistency. When nearly cold, put it in bottles and cork them. When used, the liquid can be thinned by warming. This does not resist the wet.

Waterproof Harness Blackings

To 2 oz white wax add 3 oz turpentine and dissolve together over a slow fire, using great care so that the mixture will not catch fire. When dissolved add 1 oz ivory black and 1 dram Indigo, well pulverized. Stir until cold. Apply this mixture to the harness very thin, and brush it afterward, to secure a beautiful polish.

This is another waterproof liquid: Heat together 2 oz mutton suet, 6 oz pure beeswax, 2 oz soft soap, 2½ oz lampblack and ½ oz powdered Indigo. When thoroughly mixed, add ¼ pt oil of turpentine and pour into bottles and cork.

Dissolve together over slow fire 3 oz turpentine and 2 oz white wax, then add 1 oz ivory black and 1 dram Indigo, well pulverized and mixed together. When the wax and turpentine are dissolved, add the other ingredients and stir until cold. Apply thin and polish after it is dry.

Harness Varnishes

Take 3 sticks of black sealing wax, dissolve them in ½ pt alcohol, and then apply with a sponge. Lac dissolved in alcohol and colored with lampblack will answer the same purpose. This is a quick-drying, hard varnish, liable to crack the leather, and should, therefore, be put on as seldom as possible.

Put in a jug near a stove or in the sun 1 gal alcohol, 1½ lb white turpentine, 1½ lb gum shellac, and 1 gill Venice turpentine. When dissolved, add 1 gill sweet oil and 2 oz lampblack. This mixture will not crack when the harness is twisted.

Carriage Top Dressing

Take of ivory and lampblack 1 lb each, and 4 oz of gum arabic, 6 oz of brown sugar, 1 oz of Indigo and ½ oz of glue. Dissolve in 1 qt hot water, and mix well together. If wanted thinner, add ½ oz alcohol.

Oiling Leather

Oils should not be applied to dry leather, as they will invariably injure it. If you wish to oil a harness, wet it over night, cover it with a blanket, and in the morning it will be dry and supple. After this you may apply neat's-foot oil in small quantities, using enough elbow grease to insure its thorough distribution throughout the leather. Never use vegetable oils on leather. Among all the animal oils, neat's-foot oil is considered the best.

Oil for Carriage Wheels

On the spindles of the axle tree nothing is better than castor oil. Little of this should be used, as the spindles fit so perfectly into the boxes that but little space is left for the lubricator. Never use lard upon any wheel with wood hub, as it will penetrate and follow the pores of the timber and loosen the spokes. On the fifth wheel, or circle, and other places of friction, outside the hubs, coal oil is good as a lubricator.

Gumless Oil

To 1 qt sperm oil add 1 gill refined coal oil, and mix thoroughly by shaking. This mixture is also very good to oil machinery, as it does not gum up.

Furniture Polishes

Mix ¼ lb gum shellac and 1 pt alcohol. Keep in warm place until gum is dissolved. Moisten a cloth with the polish and rub on and over the furniture briskly, polishing with a clean, soft flannel.

Mix equal parts of sweet oil, vinegar and finely powdered gum arabic. Shake until dissolved and then apply with a rag.

Mix 4 tablesp sweet oil, 4 tablesp spirits of turpentine, 1 tablesp lemon juice and 10 drops spirits of ammonia. Shake well. Use three cloths in applying. Rub the polish in with the first cloth, and polish with second and third cloths.

Raw linseed oil and spirits of turpentine, ¾ oil and ¼ turpentine, makes an efficient reviver and gives a fresh appearance to furniture treated with it. It will also remove finger marks. Another good mixture is 1 part alcohol to 3 parts sweet oil. Rub on with one flannel rag and polish with another.

Still another is to melt together ½ lb resin, ½ lb clean grease, ½ pt spirits of turpentine and ½ pt kerosene. This dries hard in a few moments. Apply briskly to clean surfaces.

Mix thoroughly together equal parts of olive oil and vinegar. Rub over the furniture with a soft cotton cloth and wipe it off with a piece of flannel.—[J. T., Neb.

Dissolve cold, with frequent stirring, 1 lb pale shellac and 1 oz mastic in 1 pt denatured alcohol.

Melt ½ lb beeswax and put in 1 oz alkanet root to color it. Then strain and add ½ gill each of linseed oil and spirits of turpentine. Bottle and cork well and shake before using. Apply with a small, soft sponge or flannel and rub off with a clean cloth.

Mix 1 pt boiled oil, 4 oz vinegar, 2 oz spirits of camphor, 1 oz spirits of ammonia and ½ oz antimony. Shake and let stand two or three days before using.—[W. H. L., Minn.

To 1 oz beeswax add ½ oz castile soap and 1 pt turpentine. Cut beeswax and soap fine and place in a qt bottle with the turpentine. Let stand 24 hours and shake often. Next day fill bottle with water, shake, and let stand over night. It should then be of the consistency of thick cream and ready for use.—[C. O. D., N H.

Mix equal parts boiled linseed oil and common vinegar. Put a little on a woolen rag and rub the furniture well.—[L. E., Mich.

To make a brown polish, mix ½ pt alcohol, ½ oz powdered resin, ½ oz gum shellac and a few drops aniline brown. Let stand over night, then add ¾ pt raw linseed oil and ½ pt spirits of turpentine. Shake well. Apply with one cloth and polish with another.—[C. S., Okla.

A nice piano polish is made of equal proportions of turpentine, linseed oil and vinegar. Mix thoroughly and rub in well with soft flannel cloth. Then polish with chamois skin. Polish only a small part of the piano at a time, finishing that part before applying polish to next part.

Pumice stone in lump is excellent for scouring wood in finishing work, for domestic scouring, and for reducing corns and callous spots on the feet. In powdered form it is the best material for scouring down varnish and for cleaning rough and dirty or stained hands.

Furniture Creams and Oils

Oils are used to freshen or revive oil or wax finished furniture. They are applied with a woolen rag and rubbed with the grain until the polish appears. For mahogany wood, mix 1 pt linseed oil with ¼ lb alkanet root. Put in a warm place until color is well mixed with the oil. For oak, mix 1 pt linseed oil and ¼ lb beeswax; melt with gentle heat and color with a little ocher.

Cut into small pieces ¼ lb yellow wax; melt it and add 1 oz powdered black resin. When these are melted, pour in, slowly, quite warm, 2 oz linseed oil or spirits of turpentine, first removing from fire. Keep in covered vessel. Apply to well-dusted and cleaned furniture with woolen cloth. In a few days it is as firm and glossy as varnish.—[Mrs J. H.,

Mix together 2 oz pearlash, 4 oz soft soap, 1 lb beeswax and 1 gal water. Boil until smooth. Linseed oil mixed with a little turpentine for general use is the best thing that can be employed. Free the furniture from dust, apply with a woolen rag and rub.

To remove stains and spots from furniture, mix ½ pt denatured alcohol, ¼ oz each of pulverized resin and gum shellac, and ½ pt linseed oil. Shake well and apply with sponge. Sweet oil removes finger marks from varnished furniture, and kerosene removes them from oiled furniture. Ink spots can be removed with salts of lemon.

An excellent homemade preparation for cleaning woodwork, or furniture, or hardwood floors that are not waxed, is prepared by shaving up two bars of common soap and dissolving them over the fire, then adding 1 tablesp turpentine and 1 of boiled linseed oil. This should be stirred into the water used for cleaning and a liberal quantity used. It will give a good polish, besides cleansing well.—[L. P., Ore.

Painting, Staining and Varnishing

For Wood, Walls and Metals

THE occupation of painting, staining and varnishing is one that some housewives delight in, while others do it to economize in the matter of time and money, finding it easier to do the work themselves than to wait until it suits the convenience of mechanic or husband. Mixed paints, stains and varnishes of good quality and almost any desired tint can be purchased at such reasonable prices that it hardly pays to mix them at home. There may be occasions, however, when the following simple directions for plain work in and about the house will be welcome.

Practical Painting Rules

Cleanse and dry the groundwork thoroughly before beginning the painting work. Let one coat become perfectly dry before applying another. Do not try to paint a light color over dark and expect success. Use just as little dryer in paint as suffices to do the work. Do not have too much paint on brush. Begin at the top of the work and proceed downward. Do not be in a hurry. Take time to do the work well.

Paint Brushes

A brush should never be left in the paint any length of time. If it is to be used frequently, it can be kept soft by being placed in water or oil. If only needed occasionally, clean and put away. A little spirits of turpentine will start the paint, and a good washing in a solution of washing soda and water completes the operation. Loosen up the bristles. It spoils a brush to have its fibers more or less cemented with paint. Let dry thoroughly.

Killing Knots

In doing indoor work, it is necessary that, before beginning, all knots in new woodwork be what is termed "killed," or else they will exude pitch when exposed to heat and impair the value of the work. In ordinary work a covering of knots with gum shellac, dissolved in alcohol and mixed to a cream with red lead, is sufficient. Another covering may be made of gutta percha, dissolved in ether to a liquid.

Floor Fillings

Before painting a floor or laying a carpet, it tends both to economy and healthfulness to fill every crack and hole in the floor. The even surface saves wear of carpets, and there are left no hiding places for insects. Here are some good fillers:

Mix 1 lb flour with 3 qts water and add 1 tablesp powdered alum. Boil five minutes. Soak shredded newspaper in this mixture until it is as thick as putty. Placed in cracks of floors it will soon harden and can then be stained or painted to match floors.—[M. H., S D.

Dissolve 1 lb common glue in 2 gals water; stir in, when glue has dissolved, enough fine sawdust to make a paste, and fill cracks. The paste may be colored to match flooring. Or, soak finely shredded paper in water and boil until a soft pulp. For every 2 gals add 1 lb glue. Fill cracks solid and even with the boards.—[R. M. F., Me.

Cut old papers, letters and envelopes into small pieces and add to every loose qt paper 2 oz gum arabic, and boil the paper and gum in water until moderately thick. While boiling hot, pour it into the cracks and let cool. Properly smoothed in, the cracks will not be discernible when such a filled floor is painted.—[P. B., N Y.

Sift 2 lb whiting into an earthen bowl; make a hole in the middle, and pour in gradually, stirring and pounding all the time, enough raw linseed oil to make it the proper consistency. Then take a small ball of this putty (size of walnut) in your hand, roll it long, like a worm, to the right thickness for the space it is to fill, and press it firmly into place. Run over it with a blunt broad-bladed knife to smooth it, and scrape off surplus. Paint, stain or varnish with rest of floor.—[Mrs C. O. D., N H.

Fill cracks in floor with well-mixed putty. It is easily done and wears well. Fill up the nail holes in wood by a mixture of fine sawdust and glue. Pound well into the holes, and when it gets dry, and a little varnish is put over them, they will not be detected.—[M. B. S., N Y.

This may be used to fill holes and cracks in furniture and may also be applied to floors or wooden partitions, or any wood needing such repairing, before being painted, varnished or covered in any way. Mix equal quantities of plaster of paris and fresh melted tallow. The tallow may be colored the desired tint, with dry mineral paints.

Reducing Paint

It is often necessary to reduce paint when the regulation means (linseed oil or turpentine) are missing and some substitute imperative. A little kerosene oil may be used in such emergency, or you may boil a mixture of 1 lb gum shellac, ½ lb sal soda and 3 parts water. If the shellac does not all dissolve, add more soda. Put 1 pt of this to 1 gal of the too thick paint. You can then reduce it to required consistency with water.

To Keep Mixed Paint

After finishing a piece of work, if some paint is left, pour over sufficient raw linseed oil to form a coating ¼ inch thick, cover and set away. When needed for use, pour off the oil and stir the paint.

Getting Ready to Paint

Old wood and walls are usually greasy and smoky. Wash with hot soapsuds or a mixture of washing soda and water. Putty up all holes and cracks. Where several coats are put on, let two or three days elapse between each painting. If soapsuds or soda solution does not remove grease, or if there is old paint to come off, try a stronger soda mixture, hot, applied with a brush and washed off with a mop. Diluted ammonia, ½ cup to 1 gal water, will usually remove grease and paint, while equal quantities of washing soda and quicklime are always effectual. Before repainting, however, wash the wood with diluted vinegar, ½ cup vinegar to 1 pt water, to remove any trace of alkali, and then let dry thoroughly.

To Remove Paint from Glass

When the paint brush touches the glass, the spot may be readily removed while fresh, with a rag wet with turpentine. After the paint has become dry, it may be removed by the use of a hot solution of sal soda applied with a flannel rag, or small spots may be rubbed off with a coin.

To Wash Paint

A very good method to wash painted surfaces is to rub bath-brick fine, and after you have rubbed some soap on a soft, damp flannel rag, dip it in this finely powdered bath-brick. Carefully rub the painted surface with this, and rinse and dry well. This will remove the grease and dirt speedily, without injury to the painted surface.

Japan Dryer

Put into 1 gal linseed oil ¾ lb gum shellac, ½ lb each of litharge, burned turkey umber and red lead, and 6 oz sugar of lead. Boil in the oil until all are dissolved, probably 4 hours, then remove from fire and stir in 1 gal turpentine.

Mixing Paints for Various Tints

Mix red and black for brown. Brown and white for chestnut. White, yellow and Venetian red for buff. Yellow and white for straw. Black, blue and white for pearl gray. Lampblack and white for lead. Lampblack, white and Indigo for silver gray. Green and white for pea green. Light green and black for dark green. Red, blue and black for olive. Yellow and red for orange. Carmine and white for pink. Emerald green and white for bright green. Blue, white and lake for purple. Venetian red and black for chocolate. Lake, white and vermilion for flesh color. White and crimson lake for rose color. Blue and lead color for pearl.

The above must be mixed in varying quantities. A very little crimson lake need be added to white to obtain a rose tint. It is best to try a small quantity of each paint until the correct amounts for the desired tint are found, and then proceed with larger quantities.

Painting Whitewashed Walls

First, prepare the walls. Scrape off all whitewash possible, being careful not to injure plastering, then sandpaper and brush off walls. Fill every hole and crack with plaster of paris wet with vinegar and water in equal parts. The vinegar prevents too swift hardening. For first coat of paint use 2 lb white lead to each qt of oil, and 1 gill of some dryer. For second coat, 5 lb lead to each qt oil with 1 gill of dryer. If a color is desired, add such pigment as will produce the tint preferred. Add a little at a time. If a gloss is desired, mix a little varnish in last coat, or use varnish in lieu of dryer.—[R. P., Fla.

Kitchen Floor Dressings

This dressing, correctly applied, makes a floor easy to clean and less liable to retain dirt. Place on stove ½ gal linseed oil and, while hot, add, stirring constantly, either yellow ocher, Indian red, or vermilion, until the oil is slightly colored. Try a little on a board and add more paint until the desired color is obtained. Apply, while hot, to the floor. If it cools during the operation, heat it again. Apply with a long-handled brush, or place a brush in a mop handle and use it.—[L. S. D., Kan.

To 3 lb of spruce yellow add 1½ lb dry white lead, and mix well. Dissolve 2 oz glue in 1 qt water. Thicken this glue water with the lead mixture until it spreads smoothly on a board. Use common paint brushes. It will fill the crevices and harden in them. When dry, give it a coat of linseed oil and let dry.—[W. H. L., Minn.

Floor Paints

Use 4 oz best sheet glue, soaked over night in 1 qt water. Add this to 3 qts boiling water and stir in 3 lb of any mineral paint to make the color you desire. Apply hot, and reheat it if it cools while being used. When dry, oil the surface.—[T. V., Wis.

A good and durable paint for pine floors is made as follows: Mix 4 lb French ocher with 1 gal boiling water, to which 1 oz melted glue has been added. Paint the floor while the mixture is hot, using a whitewash brush for the work. If the work is done after supper, it will be perfectly dry by morning; or, if painted after dinner, will be dry by night. When dry, apply a coat of boiled linseed oil, and use the same brush for this work also, first cleaning it, of course, from the ocher. The amount given above paints a room 14 ft sq, and 3 qts of oil will be required. Some days before painting, all the nail holes and cracks should be filled with a mixture of sawdust and glue.—[J. J., Neb.

A good floor oil finish is made by boiling together 1 pt linseed oil and 2 oz paraffin. Apply with a brush.—[A. A. J., Wyo.

Paint to Stand Boiling Water

Yellow ocher mixed with linseed oil and a little dryer is the best substance to withstand the application of hot water. Mix to the consistency of batter. Let each coat dry thoroughly before applying another.

Cheap Inside Paints

Milk may be used to mix paint, where economy is an object, or where the odor of oil is objectionable. Take dry lead, mix with milk, grind by rubbing through a cotton cloth and apply. A coat of varnish makes it more durable.—[E. M., Mass.

Dissolve 5 lb gum shellac in 5 gals boiling water, adding 15 oz saleratus. Mix this with an equal quantity of paint, prepared in the usual manner. This is good for cellar, woodwork and stairs and ordinary wood floors.—[C. P., Cal.

White House Paint

The ingredients are 2 qts skimmed milk, 8 oz fresh slaked lime, 6 oz linseed oil, 2 oz white Burgundy pitch, and 3 lb Spanish white. Slake the lime in water, expose it to the air, and mix in about ¼ of the milk. The oil in which the pitch is previously dissolved should be added a little at a time, then the rest of the milk, and afterward the Spanish white. This makes a cheap paint, and the above quantity is sufficient for 30 sq yd, two coats. If other colors are wanted, use instead of the Spanish white any other coloring matter.

Petroleum Paint

Petroleum is not properly a paint. It is more in the nature of a preserver. It penetrates wood and excludes the action of air and atmosphere by filling up the pores. No coloring matter should ever be mixed with it. Old buildings from which the paint is worn off will be preserved by a generous coat of petroleum. Put it on with a whitewash brush. Get on as much as the wood will absorb. Go over the wood twice. It is also a preservative for shingles.

To Paint Iron

Mix sufficient lampblack with equal quantities of Japan varnish and boiled linseed oil. Apply two coats to the iron.

To Bronze Radiators and Pipes

Use ordinary chrome yellow mixed with linseed oil for the pipes. When nearly dry, rub in gold or bronze powder with a piece of fur. When this is dry, varnish with thin copal varnish.—[P. B., N Y.

Paint for Buried Wood

The simplest and best paint to prevent wood which must be put under ground, from decaying, is made of boiled linseed oil, into which finely powdered charcoal has been stirred until of the proper consistency. Apply with an ordinary paint brush.

Cheap Paint for Coarse Work

Tar mixed with yellow ocher, 1-3 ocher to 2-3 liquid tar, makes a heavy, dark green paint, suitable for outbuildings, pens and old fences.—[A. A. I., Wyo.

Black Stains

Take ½ lb logwood chips and boil until the extract is very dark. Put on three coats of this extract while boiling hot. Allow each coat to dry and then lightly sandpaper it. Next put a handful of rusty nails into a stone jar and pour some strong vinegar over them. Let them remain a few days and brush the resulting solution over the stained wood, which will then become black. When dry, it will be a dull, bluish black, but a coat of shellac will make it like ebony.

A good black stain can be made by mixing pounded asphalt and mineral naphtha. The more asphalt the blacker the stain, but, as it is very volatile, it must be mixed in a corked bottle.

Cover the wood with lampblack ground in gum arabic water, and when it is dry, polish thoroughly. Or put pieces of rusty iron, nails and bolts in good black ink, and let it stand two weeks, then rub the wood with the liquid. After it is dry, polish.

Pine can be made to resemble black walnut by putting pulverized asphaltum into a bowl with twice its bulk in turpentine. Keep it warm and shake from time to time until dissolved. Strain and apply with a cloth or brush. Try a little, and if it is too dark, thin with turpentine. When the wood stained is dry, polish with a mixture of 2 parts shellac varnish and 1 part boiled oil. Put a few drops on a cloth at a time and rub briskly over the wood.

Mahogany Stains

Mix together 1 pt boiled linseed oil, 1½ gills turpentine, 3 tablesp burnt sienna, 3 tablesp whiting, ½ tablesp yellow ocher, ½ tablesp Bismarck brown and ½ teasp aniline black.

Mix as for cherry, using less red and adding as much burnt sienna. Use colors sparingly until sure of your shade. The

sienna gives a dull, soft effect. If too deep brown, add more oil and turpentine.

Add lampblack to Venetian red and linseed oil. Try a little and use more of the powders to make darker tints. When the desired shade is obtained, use it, let it dry and then varnish.

Mix ½ pt nitric acid, a piece alum size of a walnut and as much logwood as will give the desired tint.

Burnt sienna or Vandyke brown, finely ground in linseed oil, and rubbed in with a flannel, stains a pretty color. The sienna gives a rich, red brown, and the Vandyke a much darker hue.

Break 2 oz dragon's blood in pieces and put in 1 qt pure alcohol. Cork well and let the bottle stand in a warm place and shake it frequently. When dissolved it is ready for use. It makes an excellent imitation of mahogany.

Oak and Walnut Stains

Mix 1 pt boiled linseed oil, 1½ gills turpentine, 3 tablesp raw umber and 3 tablesp powdered whiting. Try the stains on bits of board. The shades may be darkened or lightened by increasing or diminishing the amount of coloring matter. Use raw umber to make oak and burnt umber for walnut.

A good oak stain for floors is made as follows: To strong lye of wood ashes, add enough copperas to make the desired shade. Put on with a mop and varnish when dry.

Cherry Stains

Boil 3 qts rain water and 4 oz annotto in a copper kettle until the annotto is dissolved. Put in a piece of potash the size of a walnut and keep on fire 30 minutes longer. Bottle for use.

Mix ½ gal raw linseed oil, ½ gal spirits of turpentine and 1 oz Indian red. Try a little, and if too pale, add more color. Give one or two coats and finish by rubbing lightly with sandpaper and giving one coat of colorless shellac varnish.

Yellow Stains

Boil together for 2 hours 1 gal water, 1 lb French berries and ½ oz alum. Use hot. Another recipe is 1 pt spirits of wine (alcohol) and 1 oz turmeric. Let stand 14 days and then strain and use.

For lemon yellow, boil 1 lb barberry root in 5 qts water for two hours and then add 1 oz alum. Or boil ½ lb saffron and ½ lb French berries in 6 qts water for three hours, then add 1-3 oz tartaric acid and the same of alum. Strain and

keep in closely corked vessel. Another way is to mix 1 oz picric acid with ½ oz liquid ammonia and add 2 qts water.

About Varnishes

Great care must be taken in making any kind of a varnish over a flame that it does not catch fire. Have ready, as a precaution, a board large enough to cover the surface of pot. If the varnish should catch fire, use board at once to cover the pot and remove it from fire. Always remove from fire before adding alcohol or turpentine. Any desired color may be made by adding a little of any suitable transparent color. If too thick, thin oil varnishes with linseed oil; alcohol varnishes with alcohol.

Care of Varnish and Brushes

Keep varnish cans well covered and in a dry place. The brushes used and the surface to be varnished must also be perfectly dry and free from any water or moisture. Varnishes are best applied in a warm place. Cold or dampness will make varnish "tacky." Clean brushes by soaking well in several baths of turpentine, then wash in alcohol and hang up to dry.

Shellac

This makes a splendid varnish for fine furniture, guns, etc. Moisten cloth with varnish and rub briskly. Twenty coats can be applied in as many minutes. It dries in a moment. Can be used for weather-beaten signs, cloth, etc. Dry paints may be ground in for painting signs on cloth or paper. It holds colors and will stand the weather. Put ½ lb best gum shellac in 1 pt alcohol. Cork well, shake occasionally and keep in a warm place until shellac is dissolved.

Cheap Homemade Varnishes

Boil 1 qt best raw linseed oil 1 hour, then add ½ lb powdered pale resin. Stir well, and when dissolved remove from fire and add ¼ pt spirits of turpentine.

This is a clear varnish: Place 1 pt Canada balsam in a wide mouthed bottle. Set in warm place until it thins down. The back of a stove is a good place. While warm and thin, add 1 pt spirits of turpentine. Shake well. This is good for maps, prints, charts, cards and paper articles.

To make camphor varnish, carefully heat 12 oz oil of lavender and ¼ oz gum camphor in a pan. Stir constantly, and while stirring, add 4 oz gum copal, a little at a time. If too thick, thin with turpentine. This makes a nice transparent varnish for muslins, wire gauze and cloth.

Elastic varnish is made by adding ¼ lb India rubber, cut fine, to ¼ lb linseed oil, while oil is boiling. When rubber is dissolved, remove from fire and add ¼ lb turpentine. Stir well and then strain. This is a slow dryer, but it makes cloth pliable and, in large degree, waterproof.

Glass varnish is made by mixing white of egg and pulverized gum tragacanth in equal quantities. Let stand till dissolved. Spread on glass with a brush. A thin solution of clear gelatin, applied to a plate of glass, placed horizontally until dry, makes a good surface for pen and ink drawings for transparencies.

A polishing varnish is made as follows: Put ½ oz powdered sealing wax in 2 oz good alcohol until wax is dissolved. This gives a nice glazed polish to leather, paper and straw articles.

Here is a glossy varnish: Melt 1 lb gum shellac in 1 pt linseed oil and then add this mixture to 3 pts boiling oil. Then add, gradually, ½ lb red lead, ½ lb litharge, ⅛ lb umber. Boil until stringy. This gives paint a very high gloss.

This is a cheap and common black varnish for rough work where a black fluid is needed. Boil 4 lb black pitch and 4 lb asphaltum (from tar) eight or ten hours, then add 2 gals boiled linseed oil, and, very gradually, 2½ lb red lead and 2½ lb litharge. Boil three hours longer and thin to free working order with spirits of turpentine. It dries in a few moments and must be applied briskly.

Another black varnish good for coal buckets, etc, is made of 1 lb asphaltum, ¼ lb lampblack, ½ lb resin and 1 qt turpentine.

Copal Varnish

Take 1 lb copal gum and ¾ lb resin and put them into 1 qt linseed oil. Boil over a slow fire about 15 minutes, then add 2 oz sugar of lead and boil 15 minutes longer. Reduce to any consistency with turpentine. Wooden pails, given three coats of this varnish, will never become water-soaked.

Black Japan

Ingredients are 3 oz each of asphaltum and burnt umber, and 1 gal boiled linseed oil. Grind the umber with a little of the oil, then add it to the asphaltum previously dissolved by heat in a small quantity of the oil. Add remainder of oil and boil until well mixed. When cool, mix to the proper consistency with oil of turpentine. This makes a good, flexible varnish.

Varnish for Trunks and Shoes

Place ½ lb gum shellac, broken into small bits, in a qt jar or jug; cover with alcohol, cork tightly; put on shelf in warm place, shaking it several times a day; then add a piece of camphor size of hen's egg; shake again and add 1 oz lampblack. It it is too thick when fit for use, in about three days, add alcohol to thin it. Pour a little out in a saucer and apply to trunk. It will, if good, dry in 5 minutes, giving a patent leather-like gloss, and will not come off till it wears off. It is durable and can be applied to shoes. It shines well, resists water and wears well. Is good to letter trunks and boxes and signs with. May be used for many purposes.

Cheap Varnish for Farm Wagons

Boil any quantity of linseed oil for an hour and to every lb of oil add 4 oz clear resin, powdered. Stir until the resin is dissolved, and then remove and add 1 oz of turpentine to every 16 oz oil. Strain, and when cool, apply it.

Coachmaker's Varnish

Melt in an iron pot 16 oz amber, then add to it ½ pt drying linseed oil, boiling hot and 3 oz each of powdered resin and asphaltum. Mix well by stirring over the fire, then remove. After cooling slightly, add 1 pt warm oil of turpentine. Mix thoroughly.

Varnishes for Rough Work

Any ocher or lead, mixed with coal tar in equal parts and thinned with turpentine, makes a nice varnish for any coarse work, and preserves wood from dampness.

Dissolve 3½ lb clear, pale resin in 1 gal oil of turpentine. Or melt together 3 lb resin and ½ gal drying oil and thin with 2 qts turpentine.

Varnish for Iron and Steel

Dissolve 10 parts of clear grains of mastic, 5 parts gum camphor, 5 parts elemi and 15 parts of sandarac in a sufficient quantity of alcohol by letting stand in a corked bottle several days and shaking frequently. This varnish is transparent and brilliant and will prevent rust.

Varnishes for Machinery and Tools

To give a neat and finished look to all kinds of machinery or ornamental iron work, take 8 lb asphaltum and melt it

in an iron kettle; then add 5 gals boiled linseed oil, 1 lb litharge and ½ lb sulphate of zinc. Add these slowly or it will boil over. Boil over a slow fire two hours, then add 1½ lb dark umber and boil two hours longer, or until the mass becomes quite thick. It may, when cool, be thinned to any desired consistency by slowly adding and stirring in some turpentine.

Melt together 2 oz tallow and 1 oz resin. Strain while hot, to get rid of specks. Apply to tools with brush, while warm, and it will keep off rust.

Stonelike Varnish

The ingredients are 40 parts each of chalk and resin, and 4 parts linseed oil. Melt together in an iron pot, then add 1 part each of native oxide of copper and sulphuric acid. Apply hot to wood with brush. When dry it will be hard as stone.

Waterproof Varnishes

Mix 1 pt turpentine, 1½ pts linseed oil, 7 oz litharge and 1 oz sugar of lead. Strain, apply with a brush, and dry in the sun or a warm place.

Mix 3 parts, by weight, of pale shellac, 1 part spirits of sal ammoniac, and 8 parts water. Place in bottle, cork, and leave for 12 hours, then place bottle in an earthen vessel over a fire and stir until every bit of shellac is dissolved. When mixed with about 10 parts water, with the addition of a little ocher, it is good for use in preparing oilcloth. It can also be used in various combinations to stain wood and make it waterproof.

To 100 parts boiled oil add 5 parts each of finely powdered litharge and beeswax. Boil until thick and stringy, then pour off the clear varnish.

To Remove Varnish from Old Work

Cleaning off old work for repolishing or varnishing is usually found difficult, and to occupy considerable time if only the scraper and glass paper be used. It can be easily accomplished in a very short time by washing the surface with liquid ammonia, applied with a piece of rag. The polish will peel off like skin, and leave the wood quite bare. In carvings or turned work, after applying the ammonia, use a hard brush to remove the varnish.

To Clean Varnished Surfaces

Never use soap and water, or any other sharp cleaning preparation. Instead, use the regular tea you serve at table, without milk and sugar. Apply and rub off with a soft, clean flannel.

Paperhanging and Whitewashing

Directions for Amateur Workers

FOR making a home sanitary, clean, and sweet, there is no better medium or one so easily obtained, as whitewash. A whole house may be made pure and wholesome by the judicious use of a half dollar's worth of lime. At this work, as well as paperhanging, women worked, without adverse criticism, in the past, when woman's occupations were limited to a very few branches outside of the domestic. The directions here given will be found helpful.

About Paperhanging

Paperhanging is more than spreading paste on a piece of paper and sticking it upon a wall. The paper must match, be free from wrinkles and finger or paste marks. A few rules to be observed in choosing paper are that large patterns make a small room seem even smaller and that papers presenting sharp contrasts in colors, and very strongly marked patterns, make a poor background for pictures and an unpleasing accompaniment to draperies and furniture. The best effect is secured by using paper in which colors and pattern are quiet and harmonious. Striped paper, without border, makes the ceiling appear higher.

To Measure a Room for Paper

Measure the width of every side and add the number of ft together. Multiply this sum by the hight of room in ft. Unless there are a great many doors and windows in the room, do not deduct them. There will be some paper wasted and these will make an allowance for it. If, however, it be necessary, for any reason, to deduct them, do so by multiplying the hight of each by its width. Add together and deduct

the amount from the first result. Then you have the net surface to be papered. Divide this by 60 and the result is the number of rolls required.

Preparing Walls

Old paper should be removed when a new one is going on. Wet a tenacious paper with hot water and scrape it off. If a wall has been whitewashed, paper will not adhere unless the wall is washed with a solution of 1 cup vinegar to 1 qt water, or 1 cup salt to 2 qts water. It is safest, even then, to apply paste to both wall and paper. Every hole in the walls should be filled with some good crack filler to keep out insects and make paper smooth.

If you have any rooms that have been whitewashed over head, do not work long and laboriously over them, washing them off with any "sizing" preparations. It is a messy, hard, unnecessary task, more to be dreaded than hanging the new paper. Just make a paste of wheat flour and mix it up with boiling vinegar instead of water, and add 5 cents' worth of glue to the paste for each room. I have seen it done repeatedly, and never an inch of paper peeled off. The vinegar neutralizes the lime in the whitewash, and the paper sticks as well as to any surface.—[F & H Reader.

Brushes and Other Tools

To paper a room the worker will need a good-sized paste brush and another one to use dry over the paper, sharp scissors and a knife, plenty of clean rags, two barrels, two long, smooth and clean boards, each 10 to 12 inches wide, or one 2-ft wide board and a stepladder. Make a long table by placing the boards on the barrels.

Trimming and Cutting

Cut the necessary full-length strips of paper, long enough to allow for waste in matching, and lay them all face down on the table, one on top of the other. Spread the paste evenly over the top or first strip of paper, taking care to cover the edges well, then turn down or fold over top and bottom parts of this strip evenly, so they will meet, bringing pasted parts together and leaving none of it exposed. Trim off edge on one side, using sharp scissors, or a sharp knife and a long, straight rule. Now lift up the paper thus trimmed and folded and you are ready to mount the ladder and put the paper on the wall—the largest wall space, next to door or window.

Hanging the Paper

Take hold of the top end of the strip, folded and trimmed as per above directions (the upper half will open and hang by the weight of the lower, still folded half), and adjust it to its proper place on the wall, being careful to start it straight. Then, with a large, clean rag in your hand, rub downward, never up or sideways. If you didn't start straight from the top, immediately loosen paper and start over again. Don't rub too hard, and do only a little at a time, lifting the paper occasionally, so that no air bubbles are left under it. When the upper part is done, dismount from ladder, undo the folded part at the bottom of the strip of paper, and proceed to adjust to the wall in the same manner. Trim with a sharp knife along the baseboard. Proceed in this way until all the full-length spaces are covered, and then match in the small spaces over and below doors and windows.

Pastes for Papering

Rub 3 pts flour smooth in 2 qts cold water, then add 8 qts boiling water and let boil slowly about ten minutes, stirring constantly. When cold, stir in 2 tablesp powdered alum. This is enough to paper a room 16 ft sq. Do not use alum for red paper.—[E. M. P., Mo.

Mix 3 pts flour in 4 pts water until lumps are all out, then pour in slowly 8 qts boiling water, stirring constantly. Dissolve 2 oz glue and 2 tablesp alum in boiling water and add to the above, also 2 teasp carbolic acid, to guard against bugs.—[J. C. V., O.

Use 3 parts sugar of lead, 3 parts powdered alum, 5 parts gum arabic and 16 parts wheat flour. Dissolve the gum arabic in 2 qts warm water and when cool stir in the flour, sugar of lead and alum with sufficient water to make a paste of proper consistency—neither too thick nor too thin—about like honey. Boil and then let cool.—[F. E. F., O.

Mix sifted flour with cold water into a thick, well-blended paste. Add boiling water, stirring it in until paste can easily be spread with a brush. Then add 2 teasp brown sugar, ½ teasp corrosive sublimate (poison) and 6 drops oil of lavender.

To ordinary flour paste, add 1 pt molasses to each gal paste. Glue may be used instead, in same proportions. The walls should be stripped of any old paper, holes filled with putty or plaster; then, to insure success, sized with thin glue water before applying paper.—[F. B. H., Okla.

Soften 9 lb finely powdered bole in water enough to cover and soften it. Then drain off all surplus water. Boil ¾ lb glue in water to make a thin solution of glue. Stir in the bole and 1 lb gypsum and force the mass through a coarse

sieve with a brush. Dilute to any desired consistency. This paste will adhere even to whitewashed walls. It is the best paste to use on old walls.—[S. R. D., La.

Rye flour is more sticky than wheat flour, and therefore more satisfactory to use for pastes.—[A. G., Mass.

Cover 4 parts, by weight, of glue, with 15 parts cold water, and soak for several hours. Warm moderately until the solution is clear, then dilute with 60 parts boiling water, well stirred in. Prepare a solution of 30 parts starch in 7 times as much water, to form a thin liquid free from lumps, and pour the boiling glue solution into it, keeping both at a boiling temperature.

A Waterproof Composition

To render wall paper adaptable for washing with soap and water without destroying the colors, make a solution of 2 parts of borax and 2 parts of stick lac, shellac, or other lac in 24 parts of hot water. Strain the solution through a fine cloth filter and coat the paper with it several times, rubbing the latter with a soft brush after every application till a brilliant polish is obtained. It is immaterial whether the paper is already pasted on the walls or still in rolls.

The Government Whitewash

Whitewash is the best substitute for paint there is, and in many cases serves the purpose quite as well, if not better, than expensive paint. That formerly known as the government whitewash has been passed about for some years, made notable by the fact that the White House was covered with it at one time. There is nothing that can compare with it for outside or inside work, and it retains its brilliancy for many years. Coloring matter may be put in, and made of any shade—Spanish brown, yellow ocher or common clay.

The making of this whitewash is as follows: Take ½ bu unslaked lime, slake with warm water, cover it during the process to keep in the steam; strain the liquid through a fine sieve or strainer; add 1 pk salt previously well dissolved in warm water, 3 lb ground rice boiled to a thin paste and stirred in boiling hot; ½ lb powdered Spanish whiting, and 1 lb glue, which has been previously dissolved in a little water over a slow fire. Add 5 gals hot water to the mixture, stir well, and let it stand for a few days, well covered. It should be put on hot. One pt of the mixture will cover a square yard, properly applied. Medium small brushes are best.

Cellar Whitewash

Tie 1 gal wheat bran loosely in very thin cheesecloth, and boil it for five hours in 5 gals water. As the water boils away, add more. Take out the bran, squeezing it well, and dissolve in the boiling size 2 oz carbolic acid. Stir well, then put in a gill of liquid Prussian blue; stir again, then add ½ peck unslaked lime. Stir, strain through a coarse sieve, and apply hot. It is best to take out a gallon at a time, leaving the whitewash pot where it will keep hot, but not boil. In applying to wood, move the brush with the grain wherever possible. Do not try to whitewash a very greasy spot without scouring. The wash will cover it up, but in a week will begin to flake and crumble.

Walls previously whitewashed need to be swept very hard with a stiff broom so as to remove all loose flakes. Brickwork or rock will take twice as much whitewash to the square yard as wood. It is poor economy to scant or skimp, especially at cracks or along seams of rock wall. Have two brushes, one long-handled, one short, with a stubby, round paint brush, for use in crannies and tight corners. Grease the hands very well before beginning to work, and protect them further with gloves of leather or rubber, coming as low as the fingers. Whitewash from the top downward, and, in working upon the ceiling, keep well back of the brush, on pain of getting a splash of whitewash in the eye.

Outdoor Whitewash

This is excellent for fences, walls, outbuildings, sheds, trellises, rough porches, or orchard tree trunks in need of protection from vermin. Break up 1 lb of clean glue in an earthen jar, cover it well with cold water, and set the jar in a vessel of boiling water. Keep the water-bath simmering until the glue is all dissolved—it should be clear, and rope slightly. Next morning heat it well, then stir it through 6 gals hot water. Add 1 pt salt, and when it is thoroughly dissolved pour the liquid, boiling hot, upon 1 pk unslaked lime, in a clean, wooden vessel. Stir hard for ten minutes. Add a little Prussian blue if wanted a clear white. Two oz of chrome yellow rubbed smooth in a cup of the wash, then well mixed with the mass, will give a lively cream color. Lampblack sifted in makes gray, dark or light, according to quantity. This whitewash will stick either hot or cold, and keeps well for some time. It is much better to use it on a clear, warm day than one either cloudy or damp. Once the glue dries and takes firm hold, it is not easy to get it off, but, unless it dries quickly, it will neither look nor last its best.

Quicklime Whitewash

This is a good substitute for white paint inside the house, since it sticks to wood, planed or rough, and rubs off very little. Powder and sift quicklime without slaking, stir 1 qt of it well into 1 gal of sweet milk. It ought to be a little thicker than cream. If too thick, add more milk; if too thin, more lime. After mixing thoroughly, add 1 cup turpentine, stirring hard as it goes in. Apply with a paint brush. This is excellent for ceilings, upper walls, the inside of kitchen closets, pantries, dairies and so on. It can be tinted like the outdoor whitewash, but is of so soft and clear a white it is more agreeable without coloring.

Lime and Alum Whitewash

Dissolve 2½ lb of alum in boiling water and add it to every pailful of whitewash. Lime whitewash should be used very thin, and when it is sufficiently bound on the walls by means of alum, two thin coats will cover the work better. Some whitewashers apply their wash too thick, and do not mix a proportionate quantity of alum to bind it, consequently the operation of the brush rubs off the first coat in various parts and leaves an uneven surface, and the original smooth surface of the wall is entirely destroyed.

Durable Whitewashes

Add to 1 pk white stone lime, while it is slaking, 1 lb melted tallow and 2 qts strong rock-salt brine. Thin to proper consistency and apply hot. The tallow repels moisture and the salt hardens the lime.

Put 5 lb unslaked lime in a pail, pour 1 gal water on it and let it slack. Take 2 qts of the cooled liquid and add water enough to make it creamy. Put in enough Indigo or bluing, about 1 cup, to make it the proper color, and also add 1 teasp salt and ½ teasp lampblack, stirring well.—[P. G., Ala.

Zinc Whitewash

Slack ½ bu fresh lime by pouring over it water sufficient to cover it 4 or 5 inches deep. Stir until slaked. Add 2 lb sulphate of zinc, dissolved in water. The mixture should be as thick as very heavy cream, when ready for use.—[M. A. P., Ill.

Fruit Tree Whitewash

Last spring I made a whitewash for apple trees with water in which tobacco stems and refuse tobacco had been boiled, using the usual amount of lime required to make a good, thick coat on the trees when applied. The effect was beyond my expectation. It made the bark look sleek and healthy, even on trees that had considerable moss on them, also the insects were destroyed on most of the trees. To spray an orchard thoroughly in early winter and again in the spring with the above whitewash will at least hold many insects in check.

Whitewashing Smoked Walls

Smoke on walls sometimes strikes through and turns the wash yellow. To prevent this, put 2 oz white pulverized vitriol in 2 qts cold water. Wash the walls with a whitewash brush dipped in this solution. Let it dry over night, then apply a whitewash made by putting 4 lb white rock lime, which is sold in packages, in a pail, covering it with hot water and dissolving it. Add to this ½ cup bluing. Apply with ordinary whitewash brush.—[W. W., Ill.

To Mend Walls Before Whitewashing

Mix ½ pt powdered unslaked lime, 1 gill plaster of paris and cold water and vinegar to make a paste. Fill the holes with this mixture and smooth off surface with a knife. Work swiftly, as it hardens rapidly.—[F. E. F., O.

Whiting mixed with glue water makes a good putty for filling cracks.

Mixing in Colors

Whitewashes, kalsomines and all outdoor or indoor washes can be colored and tinted to suit. Small quantities of the desired color can be obtained from paint dealers at small cost. They should be added to the wash and well stirred in before it has been thinned, as otherwise the color will form in lumps and cause streaky colors. All color washes dry much lighter. To preserve uniformity of tint, stir the wash frequently while using. A cup of alum dissolved in boiling water and added to each bucket of wash will prevent the latter from rubbing off.

To Prevent Plaster of Paris Hardening

When using plaster of paris it is often desirable to prevent it from hardening too rapidly. This may be easily done by

adding a saturated solution of borax to the water. One part of the solution to 12 parts of water will prevent hardening for 15 minutes. When equal parts are used, hardening will not take place for 10 or 12 hours. Adding vinegar to the water with which plaster of paris is mixed is another way of preventing rapid hardening.

To Test Stone Lime

The heavier the lime, the more certain it is to be good. Good lime is greasy or salvey to the touch, while poor lime is gritty and dry. When good lime slakes in water, it falls apart quickly and causes the water to boil up furiously and give out a great quantity of heat. The slaking of poor lime is attended with but a slight boiling of the water and a small increase of the heat. The quantity of water required to slake good lime is nearly one-half its bulk. Good lime when slaked will swell to twice its original bulk, and if exposed to water continually changed, the lime will be taken up without leaving any residue.

Kalsomining

This process, similar to whitewashing, gives a superior smoothness and gloss to the walls to which it is applied. It is suitable in appearance for the nicest house and is not costly or hard to apply. All kalsomine should be applied very smoothly with a finer and softer brush than is used for whitewashing. If it seems too thick to spread easily, add a little hot water. Two coats are usually all that are necessary. One may be enough. Before applying a new coat of kalsomine, wash off the old one with a sponge wet in tepid water. Before applying whitewash, if the ceiling has been coated several times, these coats must be removed, or the new wash will not stick. If the ceiling is smoked, wash it with a solution of washing soda and water, 1 tablesp soda to each gal water. If there are holes or cracks, fill them with some good cement or wall filler and smooth down with trowel or knife.

For the kalsomine wash, mix 8 lb whiting and ¼ lb prepared white glue, adding hot water until it is the consistency of cream.—[C. T. L., Iowa.

Here is another recipe: Dissolve 1 lb white glue in 3 pts boiling water; dissolve 20 lb whiting in hot water to consistency of batter; add the hot glue, 1 cup soft soap, and a piece of alum the size of an egg dissolved in a cup of water. Mix thoroughly. Cool before using. If too thick to spread readily, add water, a little at a time, until it is of correct thickness. This amount should cover ceilings 16 ft square with two coats.—[E. M. T., Kan.

Whitewashing Hints

If put on too thick, it will begin to flake off after a few coats have been applied. Cross the stripes of brush each time; if you whitewash north and south the first coat, go east and west the second. A very little bluing, 1 teasp to 1 gal of the wash, may be put in the last coat, to make it a clear white.

One oz carbolic acid (poison) to 1 gal prepared whitewash is useful in whitewashing cellars or any place where odors are or may be expected to gather.

To remove smoke stains from plain, rough ceilings, mix 1 pt wood ashes in each pail of whitewash before applying to ceiling.

For common work, a mixture may be used of ½ bu of lime slaked with boiling water. Add 1 lb common salt, ½ lb sulphate of zinc, and 1 gal sweet milk. This is cheap, easily made and excellent for unpainted fences and outbuildings, whether of wood or stone. It may be colored any shade by using yellow ocher, lampblack, burnt umber, Prussian blue, etc.—[S. I., Okla.

Mix the lime with fresh, sweet milk and add 1 pt salt to each gal whitewash. This makes a wash as white as paint and almost as lasting. Apply with ordinary whitewash brush. I do my whitewashing in the spring, when I have fresh cows come in, so do not have to use milk that could be used for the family.—[A. C., Miss.

Good lime, slaked with sour milk and diluted with water to the consistency of ordinary whitewash, is recommended as an excellent coating for woodwork. The casein of the milk in combination with the lime forms a permanent film, which dries quickly in warm weather.

Never use cheap washes, composed chiefly of lime or whiting, upon any valuable building, or one that at some future time you intend to paint with good material.

Fireproof Washes

To 2½ parts crystallized sal ammoniac add 1 part white vitriol (commercial sulphate of zinc), 2 parts glue, 20 parts zinc white and 30 parts water. This can be applied to woodwork exposed to open air and will render it partially fireproof, or at least very slow to ignite.

Slake stone lime in a covered tub. When slaked, pass through a fine sieve. It will then be a fine powder. To each 6 qts add 1 qt of rock salt and 1 gal water. Boil and skim clean. To each 5 lb of this add 1 lb pulverized alum and ½ lb copperas; very slowly add to this ¾ lb powdered potash and last of all 4 lb of hickory wood ashes or fine sand. Add any desired coloring and apply with a large brush. It is

as durable as slate and looks as well as nice paint. It is incombustible, stops leaks and keeps bricks free from dampness.

A Cheap Color Wash

To 1 part fine sand add 2 parts wood ashes and 3 parts slaked lime. Sift through a fine sieve, mix well and then stir in linseed oil to make the mixture about the consistency of paint. If the color is wanted darker, add a little lampblack, or any other color preferred. This wash is durable, as well as cheap, and practically fireproof. Equally good on wood or brick, for outbuildings, fences, etc.

Brick Wash

To 3 parts Portland or Rosendale cement (if Portland, use a little less), add 1 part of fine, clean, sharp sand, mix thoroughly and reduce to proper consistency with cold water. This will give a granite color. Add any other color desired. Apply with a brush and stir the mixture frequently.

Glue Wash

Make 1 lb flour into a paste and add 1 lb hot glue, dissolved in warm water over a slow fire. While this mixture is still hot, add 1½ pts linseed oil. Pour this mixture into 25 lb whiting previously mixed to proper consistency in water. Should be a little thicker than whitewash. Apply same as whitewash.

Soap and Oil Wash

This is a good, cheap wash for outbuildings: Mix 1 gal soft soap with 2 gals soft, warm water and when dissolved put in 1 gal raw linseed oil. Lastly mix in about 25 lb "mineral paint"—a powder which can be purchased from paint dealers.

Compound Mineral Wash

Make a thin wash of 1 pk lime, then add 25 lb each of whiting, "mineral paint," and finely sifted sand or road dust. Mix this to a thick paste with linseed oil and thin with fresh buttermilk. The addition of ½ gal soft soap improves this wash.

Flaxseed Wash

Boil ½ lb flaxseed about two hours in a pail of water, then strain and add 2 qts each of common land plaster and sifted wood ashes, and 1 cup each of flour and salt. Let stand several days and stir frequently, after which it will be ready for use.

Cheap Fence Wash

Slake 1 bu white lime and mix it into a good whitewash with 40 gals water; add 20 lb Spanish whiting, 17 lb rock salt, and 12 lb brown sugar. Stir together well. It does not wash off and wears well, and it is adapted to use on outbuildings exposed to the weather. To make a cream color, add 3 lb yellow ocher; if fawn color is wanted, 4 lb umber, 1 of Indian red and 1 lb lampblack. For gray, add 4 lb raw umber and 2 of lampblack. This is much more lasting and nearly as cheap as whitewash, while it looks much better on fences and buildings.

Roof Composition

To 1 measure of fine sand add 2 measures sifted wood ashes and 3 measures of lime ground up with oil. Mix thoroughly and put on with a painter's brush, first a thin coat and then a thick one, after the first one has dried. This is a cheap composition and will resist fire.

Artificial Stone

Make sand or gravel into a paste with fluid silicate of soda (water glass). Mold to the desired shape and then dip into a solution of chloride of calcium. It is said that the mass will become solid in a few minutes, and become exceedingly strong and durable.

To Preserve Garden Stakes

Bring common coal tar to the boiling point in a kettle about 12 inches deep. Place the lower part of the stakes in the boiling tar, and after they have remained therein about 10 minutes, take them out, allowing the surplus tar to drain off. Roll the tarred parts of the stakes in clean, sharp sand, covering every part of the tar. After they have become perfectly dry, give them another coat of tar, completely covering the sanded parts.

A Paint Board

The amateur painter finds her chief difficulty, in painting, her liability to smooch parts not meant to be touched. A paint board is easily made and is a great help. It should be about 8 in wide, 2 or 3 ft long and about ¾ inch thick. Shape a hand hole and plane one long edge down sharp. Hold in the left hand against top of mopboard, or wherever desired, to protect paper or other wood.

For Additional Memoranda

Glues, Paste and Mucilage

To Make and to Mend

GLUES are needed in every home and workshop. Tin, glass, wood, leather, and paper require different kinds of glues or pastes. Sometimes there are also damp-proof, fireproof, or waterproof requirements, as well as those of color. These varieties can all be easily and inexpensively made at home according to the following directions. Under the heading of cements a number of other valuable mending recipes will be found in another chapter.

About Glues

The best glue ever made will be useless if wrongly applied. The parts to be united must be clean, and they must be so united that no air remains between the parts. When warm glues are used the two surfaces to be joined should also be warmed. Don't use too much glue, nor too thin, nor too thick glue. The parts joined must be firmly held together until bone dry. Good glue is always crisp when in the cake or flake form and will bear little bending. It should be clear and have no taste nor smell. If it dissolves in cold water, it is of poor quality. Good glue swells in cold water, but needs hot water to dissolve it. Moist glue soon spoils. When a job requiring extra care or strength is contemplated, it is safest to make a fresh pot of glue.

The Glue Kettle

Glue made in vessels set directly upon a stove often cook too rapidly or burn. The glue pot should be set in another, containing hot water. Even then, incrustation near the top of dish often takes place, unless three or four small holes are drilled in the side of the kettle near the top rim. Then the

rising steam passes through the holes and keeps the kettle above the surface of the glue constantly moist. These holes should be made in only half of the kettle, so as to provide a place for pouring out glue, if desired. A very simple glue pot can be made by using a tin cup that will set evenly into the top of a teakettle, or it may be placed in a kettle of boiling water of any convenient size.

Break the cakes, flakes or pieces into small bits, place these in tepid water and let the glue swell slowly. After it is thoroughly softened, set the glue cup into hot water; stir and add hot water until it is all dissolved into the consistency of medium, thick molasses.

Liquid Glues

There are many formulas for preparing glue. The most common and easy way is to make the ordinary "hot glue," soaked in tepid, and dissolved in hot water to desired consistency. A little nitric acid, ¼ oz to each lb glue, will prevent it from cooling into a solid mass, and 1 tablesp vinegar to each qt prepared glue will prevent molding.

Place ½ lb dry glue in a wide-mouthed bottle and add ½ pt tepid water. Place the bottle in tepid water and heat until the glue dissolves. Remove bottle and gently stir in 2½ oz nitric acid. Cork tightly. This is always ready and is useful in mending furniture and all articles not used for water.

An excellent liquid glue is made by dissolving glue in nitric ether. The solution cannot be made too thick, as the ether will only dissolve a certain quantity of glue. It will be of about the consistency of molasses, and doubly as tenacious as that made with hot water. If a few bits of native India rubber, cut into scraps the size of buckshot, be added, and the solution allowed to stand a few days, being stirred frequently, it will be all the better, and will resist dampness much more effectually than glue made with water.

Compound Glues

Place equal parts of common glue and isinglass into enough alcohol to cover them for 24 hours. Melt them together by placing vessel in hot water, and when hot, stir in as much powdered chalk as will make the mixture an opaque white. This makes a very adhesive glue, especially good for white articles.

An adhesive substance termed compound glue can be made from flour, white of egg and yeast. Use equal quantities of flour and egg and mix with yeast to a doughy consistency, so that it can be kneaded. Work in at this stage as much gum arabic water as it will take. Then dry it in oven and

cut into cakes. This may be colored with indigo for blue tints; with dry vermilion for red hues, and with tincture saffron for yellow.—[R. M., O.

Melt together 5 parts liquid glue, 2 parts sugar and 8 parts water. Cast in molds. Dissolve in warm water when needed. This makes a good portable glue.

Isinglass Glue

Boil and strain until clear 1 lb best glue; boil also 4 oz isinglass until dissolved. Put both in a glue pot with ½ lb dry brown sugar and boil down until it will just pour. Place in molds. When cold, cut into small pieces and dry the pieces. This glue is liked by architects and artists, as it dilutes at once in warm water and can be carried around easily in a box or one's pocket.

Elastic Glue

Good common glue is dissolved in hot water after soaking in cold. It is then cooked or evaporated down to a thick mass, to which a quantity of liquid glycerin, equal in weight with the glue, is placed. Then heat again until steam ceases to rise, when it may be poured into molds or on a marble slab.

Fireproof Glue

Mix 1 cup quicklime in 4 oz linseed oil; boil until thick as molasses or thicker. Spread on plates in shade and it will become hard. If it does not, boil again. When needed, dissolve over fire. It resists fire after use.

Waterproof Glue

Add 1 oz white turpentine to 1 pt alcohol. Dissolve in this mixture 1 oz gum sandarac and 1 oz of mastic. Heat these to the boiling point carefully, as both liquids are inflammable, and add ½ pt thick liquid glue in which 2 teasp isinglass have been stirred. It must be used hot. It dries quickly and becomes very hard, so that surfaces of wood united by it do not separate in water.

Glue for Damp Atmosphere

Add ½ oz each linseed oil, varnish and turpentine to each lb of glue prepared by mixing and boiling glue and flour in equal parts. Labels attached with this glue will adhere in the most damp places.

Glue for Labeling Glass

A glue for fastening labels on preserve jars or cans is made by soaking 5 parts of good glue in 20 parts of water, then adding 10 parts white sugar and 5 parts gum arabic. Use it lukewarm. It keeps well, and when placed on labels adheres firmly.

Glue for Labeling Tin

Put 2 oz pulverized borax in 1 qt boiling water; add 4 oz gum shellac, and boil until it is dissolved. This glue is used for parchments, papers and cloth, as well as tin.

Whisky Glue

To any quantity of glue use common whisky instead of water. Put both together in a bottle, cork tight, and set away for three or four days, after which it will be fit for use without the application of heat. The whisky will only dissolve a given quantity of glue, so there is no danger of using too much.

Marine Glue

Dissolve 4 oz India rubber in 8 oz coal oil or coal tar naphtha, aiding the solution with heat and agitation. The solution is then thick as cream, and to it should be added 1 lb powdered shellac, which must be heated in the mixture till all is dissolved. When the mixture is hot it is poured on plates of metal, in sheets, like leather. It can be kept in that state, and when it is required to be used, it should be put into a pot and heated until it is soft, and then applied with a brush to the surfaces to be joined. It is said that two pieces of wood joined with this cement can scarcely be sundered. It also resists the action of water.

Sheet Glue

This is stronger than mucilage and is handy for quickly uniting small, light objects. Dissolve the purest glue you can find with ¼ its weight of coarse, brown sugar in as small a quantity of boiling water as possible. When thoroughly dissolved, pour in thin cakes on a slightly oiled metal surface, and as it cools, cut it into pieces of convenient size. When used, one end may be moistened with mouth or sponge, to rub on surfaces needing uniting. It is handy for travelers, and to keep in the work-box or desk.

Glue for Stones and Steel

This glue is used to unite precious stones to metallic substances, as in rings, and is recommended as being able to unite two metallic surfaces, if desired. Dissolve 6 bits of gum mastic, the size of peas, in enough alcohol to make them a liquid. In another vessel, dissolve in brandy as much isinglass, softened in water, as will make a strong glue and fill a 2 oz bottle, adding 2 small bits gum ammoniac. As soon as this substance dissolves, unite the two mixtures by heat. Keep in a bottle closely corked. When it is to be used, soften by setting bottle in hot water and letting it come to a boil.

Rice Glue

The Japanese boil rice in water till it is reduced to a thick, fine paste. This makes a fine, clear, almost transparent glue, very useful in pasting white paper.

Shellac Substitute

A solution of cake shellac and alcohol in equal parts, by weight, forms a fair substitute for glue, but is far inferior. It can, however, be used when glue is unobtainable.

Easily Made Mucilages

Mix 3 oz gum arabic, 3 oz vinegar and 1 oz white sugar.—[H. W., Pa.

Dissolve 2 oz gum arabic in 4 oz water. Add 2 drops glycerin to keep it sweet.

Dissolve 1 heaping teasp gum arabic in ¾ cup warm water. This is cheaper than store mucilage and the simplest made.

To make mucilage for labels, mix thoroughly 2 oz dextrine, 2 oz glycerin, 1 dram alcohol and 1 oz hot water.—[F. A., Ore.

Commercial Mucilage

This is made by dissolving clear glue in equal volumes of water and strong vinegar; then adding ¼ as much alcohol and a small quantity of powdered alum in water.

Fruit Tree Mucilage

A good mucilage can be made by using the gum from fruit trees. Fill a wide-mouthed bottle half full of the gum and pour strong vinegar on it. Keep it well corked. For the

brush, put a feather through the cork and let it remain in the bottle.—[L. T. T., N C.

Pocket Mucilage

Boil ¼ lb best white glue in water, and strain. Boil 1 oz isinglass in water, strain, and mix the liquids. Place them over slight heat, or steam, adding 2 oz white sugar. Let the mixture evaporate till thick; then pour into molds and dry. It can be carried in bags, trunks or pockets, dissolves at once in water, and fastens paper very firmly.—[T. K., Ia.

Gum Arabic Mucilage

Place ½ lb gum arabic in a qt bottle; pour in water till the bottle is ¾ full; then add about a wineglassful of vinegar, brandy, whisky, or alcohol, to prevent fermentation. Shake occasionally, each day, for a week. This will not spoil.

Gum Tragacanth Mucilage

Mix 2 oz gum tragacanth and 1 oz powdered gum arabic; cover with cold water until dissolved; then reduce with water to desired consistency. Four or 5 drops of carbolic acid prevents its souring.—[R. P., Mass.

Mucilage for Mounting Photos

Soak 1 oz shredded gelatin in ¼ pt cold water two hours. Drain off the water and put the gelatin into a wide-mouthed bottle, adding ¾ oz glycerin and 10 oz good alcohol. Shake occasionally until dissolved. Warm before using.—[Mrs J. H., N Y.

Damp-Proof Mucilage

Dissolve 5 parts good glue in 20 parts water and to this liquid add 9 parts rock candy and 3 parts gum arabic. Use lukewarm. This is a good mucilage for labels and will adhere firmly to glass bottles.

Paste for General Use

Dissolve ½ teasp powdered alum in 2 oz water. Moisten 1 oz starch in 1 oz water. Mix the two liquids and heat it until it thickens, stirring constantly, then add 7 drops oil of cloves. As soon as removed from fire, strain through a cheesecloth and keep in covered bottle.—[A. C., Minn.

Paste for Scrap-Books

Mix together 1 teasp powdered starch, 1 teasp flour and a pinch of salt, then stir in 2 tablesp cold water and when smooth add ½ cup boiling water. Stir and cook until the consistency of boiled starch for collars. Remove from fire and stir in 3 or 4 drops oil of lavender.

Tin Box Paste

To fix labels to tin boxes use either of these formulas: Soften good glue in warm water, enough to cover it, boil it in strong vinegar, and while boiling, thicken the liquid, which should be thin, with fine wheat flour, stirred smooth in cold water. Half cup flour will thicken a pt of the mixture. Or, use strong starch paste in which a little Venice turpentine has been mixed. Or, add sugar or molasses to the paste, in proportion of 1 qt molasses or 2 lb brown sugar to each 8 qts of paste.

Damp-Proof Paste

Prepare a paste of rye flour and liquid glue—1 part flour to 2 of glue. The glue should be prepared with linseed oil, varnish and turpentine, ½ oz each to a lb of glue. Mix the rye flour in water and add it to the glue. This paste is damp-proof.

Stickfast Paste

Dissolve 1 teasp alum in 1 qt water. When cold, stir in enough flour to make paste of the same consistency as thick cream. Rub out all lumps and make perfectly smooth. Stir in ½ teasp powdered resin and over all 1 cup boiling water, stirring it well. Let boil, and when it becomes thick, pour into a jar with a few drops of oil of cloves, and keep in a close place. When required for use, take out a little and soften with warm water. It is more like a glue than paste, and is very useful for household purposes.

Grafting Wax

Melt together 5 parts resin, 1 part beeswax and 1 part tallow. When ready to use apply the mixture warm. Bandages will be required until every part has been well covered with the grafting wax, so as to completely exclude the air.

Soluble Glass

Thoroughly mix 10 parts carbonate of potash, 15 parts powdered quartz and 1 part powdered charcoal. The mass will become soluble in 4 or 5 parts boiling water, and the filtered solution, evaporated to dryness, yields a transparent glass permanent in the air.

Silver Wash

The ingredients are 1 oz nitric acid, 1 silver ten-cent piece and 1 oz of quicksilver. Put the ingredients in an open glass vessel, let stand until dissolved, then add 1 pt water and the wash is ready for use. It can be made into a powder by adding whiting, and may be used then on brass, copper, German silver, etc.

For Additional Memoranda

Cements, Putty and Solder

How to Mend Breaks and Tears

CEMENTING and soldering are not such difficult jobs as some people imagine. Any handy man or woman can mend broken, torn or worn articles of crockery, glass, wood, metal, cloth, paper, leather, rubber, etc., at small expense and expenditure of time, with economical and satisfactory results. The following recipes are varied and thoroughly reliable, if directions are carefully noted. Don't throw away anything that can be mended and used again.

About Cements

A cement is often dubbed worthless because it has been used improperly, and, naturally, has failed to perform the work expected of it. Many people use too much cement. When broken parts are closely brought together there is left small space for the cement, and a small amount should be used. If the parts are separated by a sheet of cement, it will surely give way. The parts to be joined should be thoroughly cleansed and dried before the application of the cement, or they will not stick together. The complete seclusion of air by pressure, after the cement is applied, is absolutely necessary to effectual adhesion. When using warm glues or cements, be sure to warm the articles to be mended, to about the same temperature.

Farm and Home Cement

A good cement for mending almost anything may be made by mixing together litharge and glycerin, to the consistency of thick cream or fresh putty. This cement is useful for mending stone jars or any coarse earthen-ware, stopping leaks in seams of tin pans and wash boilers, cracks and holes in iron kettles, etc. It also may be used to fasten on lamp

tops, to tighten loose nuts, to secure bolts whose nuts are lost, to tighten loose joints of wood or iron, loose boxes in wagon hubs, and in a great many other ways. In all cases the articles to be mended should be cleaned and not be used until the cement is hardened, which will require from one day to a week, according to the quantity used. This cement will resist the action of hot or cold water, acids and almost any degree of heat.—[M. A. J., Wis.

Cementing Dishes with Milk

Our grandmothers often mended dishes by tying them firmly in correct positions and boiling them in milk. Sometimes they varied this by soaking the tied dishes in warm, fresh milk and allowing them to dry gradually when withdrawn. Some glutinous property of the milk, perhaps casein, penetrates to the edges and congeals with tenacious clutch.—[E. K., Mass.

China and Crockery Cements

For fine china mix ½ lb rice flour in 2 qts cold water and let it boil slowly down to a paste. This is also excellent in making white paper boxes or uniting cards, and when made to the consistency of plaster clay, models may be formed of it, very pretty and durable when dry.—[M. S., Pa.

Prepare a thick solution of gum arabic and into this stir plaster of paris until it becomes of the consistency of heavy cream. Clean the china to be mended, warm it and apply the cement. Tie firmly and set away for three days.

Mix enough powdered unslaked lime with the white of one egg to make a thick cream. Apply to the edges of crockery and fasten the pieces firmly together. Make only a little of the cement at a time, as it hardens quickly, and then becomes useless.—[P. B., N Y.

For mending crockery and similar articles so that they will stand heat and water, use pure white lead mixed in linseed oil, and use it very thick. It unites very firmly, but takes a long time to set. It is best to place the mended article away for several weeks. It will, if joined correctly, never come apart. Prepared white lead can be bought in 1 lb cans, and its adhesive qualities are better the longer it is kept.—[E. K., Mass.

Take 2 lb white glue, ¾ lb dry white lead, ¼ lb isinglass, ½ gal soft water, 1 pt alcohol and ¼ pt white varnish. Dissolve the glue and isinglass in water by gentle heat, and then stir in the lead. Mix the alcohol with the varnish and then stir into the first mixture and mix the whole well together.

Glass Cements

Mix powdered glass, in equal quantities, with a concentrated solution of silicate of soda. This will make an acid-proof cement.

An old-fashioned recipe is as follows: Boil a piece of flint glass in soft water about 5 minutes, then pound and grind it fine on a flat stone, and mix with white of egg to a paste.—[E. P., Mass.

Balsam of fir makes a good cement for joining lenses, mounting microscopic objects, or for any glass that will not be exposed to washing in hot water. When too thin, thicken by gentle evaporation over a fire.—[R. T., Ind.

A cement for cracks in glass vessels, one that resists moisture and heat, is prepared by dissolving as much casein as possible in a cold saturated solution of borax. With this mixture, paste strips of hog's or bullock's bladder on the cracks, and dry with gentle heat. If the vessel is ever to be heated, coat the bladder strips on the outside, just before they dry, with a paste of a concentrated solution of salsoda and quicklime or plaster of paris.

Red Cement

This is largely used in cementing glass to metal, although it may be used for cementing purposes generally, where colored cement is needed. Melt 5 parts of black resin with 1 part yellow wax; then stir in gradually 1 part red ocher or Venetian red in powdered form. This cement requires melting again before use, and adheres better if the article on which it is to be used is warmed.

White Cement

Melt together 1 oz beeswax and 4 parts resin, then add 5 parts plaster of paris. Warm the edges of the articles to be united, and use the cement warm. Let stand three days.

Gelatin Cement

Mix together 5 parts clear gelatin and 1 part soluble acid chromate of lime. Cover broken edges of crockery with this, press together, and expose to sunlight. Dishes mended with this may be, with proper care, washed in warm water. The cement is said to be insoluble.

Acid-Proof Cement

Melt together 1 part pitch and 1 part resin, and then add 1 part plaster of paris. The ingredients must be of the best,

and perfectly dry, to get satisfactory results. Use at once, as this cement hardens quickly.

Waterproof Cement

Mix ¼ pt vinegar with ½ pt sweet milk. Let it stand a few minutes, then drain off the whey that has formed and add the beaten whites of 3 eggs to it. Beat together and add sufficient quicklime to make a thick paste. This is both fireproof and waterproof. To be used at once.—[B. J., Ark.

Cork Cement

When a cement is to be used to make corks of bottles perfectly air-tight, neither the extremely hard or the kind softened by chemical vapors is desirable. The best cement for such uses is red lead or finely powdered litharge mixed, in equal parts, with undiluted glycerin. This makes a hard cement and is yet easy to remove.

Knife Handle Cement

Mix well 1 tablesp melted beeswax, 4 tablesp powdered resin, and 1 tablesp plaster of paris or brick dust. If too stiff, add more beeswax, a very little at a time. Fill the hole in handle with cement and press the tang of blade down into it.—[B. J., Ark.

Alabaster Cement

Stir finely powdered plaster of paris into a cream with water. This will mend plaster images or join pieces of alabaster or marble. The cement hardens very quickly. Put some white vinegar into the water, if you do not wish the cement to harden so quickly, or use borax in the water.

Powdered Cement

Curdle 2 qts skim milk; press out the whey and dry the curd by gentle heat, but as quickly as possible. When quite dry, grind it to a powder in a coffee mill and mix it with 1-16 part of its own weight of powdered quicklime; add ⅛ teasp powdered camphor to each oz of the mixture. When needed for use, mix to a paste with water and apply immediately to broken surfaces.

Cement for Marble

Mix plaster of paris with shellac previously dissolved in alcohol. Plaster of paris mixed with white of egg also makes a good cement. Use quickly.

Hard Cements

Take equal quantities of white lead and white sand and mix with linseed oil to the consistency of putty. It will become very hard.

Powder well-dried clay to fine dust and mix with boiled linseed oil. Another cement calls for 2 parts sifted ashes, 3 parts clay and ½ part sand, mixed with boiled linseed oil. These cements harden quickly.

Litharge Cement

For mending small tanks and such things, a good cement is made of equal parts of litharge, sifted sand and plaster of paris, made into a paste with boiled linseed oil. Mix only as much as is wanted at the time.

Shellac Cements

Dry shellac makes an excellent waterproof cement for repairing household articles where metals must be joined to wood, bone or porcelain, such as umbrella or cane handles, door knobs, knife handles, etc, also for many other things which must be cemented together. Ten to 15 cents' worth of flake shellac will last for years. Fill the hole in the article to be repaired with it, or spread a thin layer of it over the flat surface; heat the metal until it will melt the shellac readily, press the two together, and when the metal cools, the job is done.

Here's another way: Put fine shellac flakes in a bottle and add same quantity fine alcohol. Cork bottle tightly and set it in a pitcher of warm water. Shake often, until shellac has dissolved. This is a handy, every-ready cement for general use.

Cement for Small Leaks and Breaks

Beat yellow soap and whiting with a little water into a thick paste. Or prepare some strong alum water and mix in plaster of paris to a thick paste. Or prepare a strong solution of gum arabic and stir to a paste with plaster of paris.

Mahogany Cement

Melt 4 oz of beeswax and add 1 oz of red lead and enough yellow ocher to produce tint desired. Use to fill cracks and holes in dark furniture.—[M. O. P., Ill.

A No 1 Cement

Take 2 oz of a thick solution of glue and mix into it 1 oz each of linseed oil and varnish, and ½ oz pure turpentine. The whole should be gently and carefully boiled together in a double boiler. The parts to be cemented should be clamped and held together for about two days after they are united to allow the cement to become dry.

Never-Yielding Cement

Pound calcined oyster shells, sift the powder through a fine sieve, and grind it on a marble slab till reduced to the finest powder; then take the whites of several eggs, according to quantity required; beat them well and having mixed them with the powder, form the whole into a kind of paste. With this paste join pieces of china, glass, or marble, pressing them together for a few minutes. The united parts will stand heat and water, and will not come apart if they should fall on the ground.

Armenian Cement

This glue will strongly unite pieces of glass and china and even polished steel. Dissolve 5 or 6 pieces of gum mastic, each the size of a large pea, in as much pure alcohol (rectified spirits of wine) as will suffice to render it liquid. In another vessel dissolve as much isinglass, previously a little softened in cold water (though none of the water must be used), in French brandy or good rum, as will make 2 oz of very strong glue, adding 2 small pieces of gum galbanum or ammoniacum, which must be ground until dissolved. Mix everything together with sufficient heat to properly incorporate all the ingredients. Keep this glue in a closely stoppered bottle, and when it is wanted for use, warm it by setting the bottle in hot water.

Indian Cement

Take 1 lb best glue, the stronger the better, add a little water, and boil and strain it. Boil also 4 oz of isinglass in a little water, then put both mixtures together, add ½ lb brown sugar, and boil the whole until it gets thick. Pour into shallow plates or molds, and when cold cut and dry in small pieces for the pocket. The glue may be used by merely holding it over steam or wetting it with the mouth. This is a most useful and convenient article, being much stronger than common glue. It can be used for all sorts of small fractures and will cement glass or china which will not be expected

to resist the action of hot water. It can be used, too, for parchment and paper, in lieu of paste.

Japanese Cement

Mix smooth best powdered rice with a little cold water, then gradually add boiling water until of proper consistency, stirring well all the while. Bring to a boil and boil one minute. This glue is beautifully white and almost transparent. It is well adapted for fancy paper work, which requires a strong and colorless cement.

Persian Cement

To ½ oz of the best isinglass add 1½ oz strong acetic acid (vinegar). Cut the isinglass fine with scissors, and dissolve by putting the tin or bottle in hot water. This cement will stand water and any amount of rough usage, but not strong heat. For joining marble or any similar material, a little of the powdered oyster shell (as directed in the Never-Yielding Cement recipe), should be added, and the parts made hot before joining; the cement to be used as thin as possible.

Lamp Cement

This is especially useful in fastening the loosened brass tops of lamps in place. Boil 3 parts resin with 1 part caustic soda and 5 parts water. This, mixed with half its weight of plaster of paris, makes a cement not penetrable by oil and a poor conductor of heat. It sets firmly in a short time. Common alum melted in an iron spoon over hot coals forms a good cement for joining glass and metals together, and it is also good to hold glass lamps to their stands.

Fireproof Stove Cement

A cement for filling up cracks and holes in stoves is finely pulverized binoxide of magnesia, mixed with a strong solution of silicate of soda (water clay), so it forms a thick paste. Fill the cracks and heat stove slowly. Wood ashes and common salt, wet with water will also stop the cracks of a stove.

Cement for Mending Metal

Mix 2 parts finely powdered litharge with 1 part very fine, clean sand and 1 part quicklime which has been allowed to slake spontaneously by exposure to the air. This mixture may be kept any length of time without injury. In using it,

a portion should be mixed to paste with linseed oil, boiled linseed oil preferred. In this state it must be quickly applied, as it soon becomes hard.

Movable Joint Cement

Where it is necessary to occasionally open a joint in iron, an easily removed cement is made by using equal parts of red and white lead, ground in linseed oil. Spread on canvas or woolen strips, both sides, and place between the parts to be joined.

Cement for Steam Pipe Joints

The following mixture, it is said, makes a cement impermeable by air or water, hot or cold: Six parts of finely powdered graphite, 3 parts slaked lime and 8 parts of sulphur are mixed with 7 parts of boiled linseed oil. The mass must be well kneaded until the mixture is perfect.

Cements for Leather

A good adhesive material for mending boots and shoes may be made by melting together 1 lb gutta percha, 4 oz India rubber, 2 oz pitch, 1 oz gum shellac and 2 oz linseed oil. Use hot. Smear the patch with mixture and press on firmly. Let dry thoroughly.

Here's another: Mix 10 parts bi-sulphide carbon and 1 part spirits of turpentine. Add enough gutta percha to make a thick, flowing liquid. In joining surfaces, cleanse them of grease by placing a woolen cloth on them and applying a hot iron to it. Apply this mixture to both surfaces, that of the article to be mended and the patch. Press hard until dry.

Here's still another: Use the best glue; pour on it an equal quantity of water; let it soak over night; next day melt it over a gentle heat, then add 1 cup white lead to each qt of glue mixture. Mix well and add a little vinegar, carbolic acid or oil of cloves, to prevent putrefaction. This is good for all flexible articles, but does not withstand boiling water application, which softens the glue.

This is a waterproof cement, useful for mending or joining leather goods. Melt in an iron vessel equal parts of common pitch and gutta percha. Apply while warm.

Gutta Percha Cement

A good leather cement is made by dissolving gutta percha in chloroform in quantity to make a fluid of honey-like consistency. When spread it will dry in a few minutes. Heat

the surface at a fire or flame until softened and apply them together. Small patches of leather can be thus cemented on boots, etc, so as almost to defy detection, and shoemakers employ it with great success for this purpose. It is waterproof and will answer almost everywhere, unless exposed to heat, which softens it.

Sulphide of Carbon Cement

A good material for cementing leather is made of 10 parts sulphide of carbon and 1 part oil of turpentine, with enough gutta percha to make a thick, flowing liquid. It should be remembered that leather filled with grease cannot be cemented as it should be, and where the parts to be united contain oil, trim them well, fold a cloth over them and apply a hot iron for a short time, then apply the cement to both parts, and press together until entirely dry.

Cement for Belting

This is a cement for leather belting: Common glue and isinglass, equal parts, soaked for ten hours in just enough water to cover them; bring gradually to a boiling heat and add pure tannin until the whole becomes ropy, or appears like the white of eggs. Buff off the surfaces to be joined, apply this cement and clamp firmly. Allow one day for drying.

Cement for Belting

A cement, made by dissolving India rubber, cut fine, in benzine, may be used to mend rubber boots and shoes. This cement will firmly fasten on the rubber patch. Put the pieces of rubber in a wide-mouthed bottle and fill it about half full of the purest benzine. The rubber will swell up almost immediately, and if well shaken will, in a few days, assume the consistency of honey. If the rubber does not dissolve, add more benzine. If, when dissolved, the cement is too thin, add more gum. A piece of rubber 1 inch in diameter will make 1 pt of cement. This dries in a few minutes and is very useful in uniting pieces of leather, as it is both elastic and durable.

Another formula calls for powdered shellac, softened in ten times its weight of strong water of ammonia, whereby a transparent mass is obtained, which becomes fluid after keeping some little time, without the use of hot water. In three or four weeks the mixture is perfectly liquid, and, when applied, it will be found to soften the rubber. As soon as the ammonia evaporates, the rubber hardens again—it is said quite firmly—and thus becomes impervious both to gases and

to liquids. For cementing sheet rubber, or rubber material in any shape, to metal, glass and other smooth surfaces, the cement is highly recommended.

This is excellent for placing patches on rubber boots and garments, or for joining rubber to any other substance, and can also be used as a general cement: Cut 4 oz India rubber into shreds and add it to 2 oz linseed oil. It will soften in three or four days. When soft, melt 16 oz gutta percha and 2 oz pitch together and stir with the rubber solution.—[Mrs J. H., N Y.

Cement for Cloth

To be used in renewing cloth on desks, tables, or any attaching of cloth to wood. Mix 1 lb wheat flour and 1 tablesp each of powdered resin and powdered alum to a smooth paste with a little cold water. Put over the fire and stir until entirely free from lumps. When it is so stiff that a spoon will stand upright in it, place in a covered receptacle, else a skin will form on its surface. Apply this cement in a thin layer to every inch of the surface. Place cloth or leather on it and smooth carefully down, to leave no wrinkles.

Aquarium Cements

This cement will resist the action of water for any length of time. It can be used for fresh or salt water aquariums. Mix 1 gill litharge, 1 gill plaster of paris, 1 gill dry, white sand and ½ gill fine powdered rosin. Sift all together and keep corked tight until needed. Then make into a putty by adding linseed oil in which a little dryer has been mixed. Litharge may be used, a tablesp to a pit of oil, as a dryer. Let it stand 16 hours or more, after oil is added, before using it. Let the tanks stand two or three hours to dry out before filling it.

When an aquarium leaks, coat a piece of flannel with this cement and paste it over the leak: Mix to consistency of thick paste, 2 parts of white lead, 1 of red lead, and 1 part litharge, with sufficient linseed oil.

For cementing small tanks, the best mixture is equal parts of sand, litharge and plaster of paris, made to a paste with boiled linseed oil.

Cement for Stone

Melt together 7 parts resin and 1 part beeswax, and then mix in a sufficient quantity of plaster of paris. The stones should be hot enough to melt the cement, and the pieces should be pressed together as closely as possible.

Pitch Cement

Melt together in an iron pan 2 parts common pitch and 1 part gutta percha, stirring them until thoroughly incorporated, and then pour the liquid into cold water. When cold, it is black, solid and elastic; but it softens with heat and at 100° F. is a thin fluid. It may be used as soft paste or in a liquid state, and answers an excellent purpose in cementing metal, glass, porcelain, ivory, etc. It may also be used instead of putty in glazing windows.

Roof Cement

Melt over a slow fire in an iron pot 4 parts coal tar and then add 1 part air-slaked stone lime and 1 part cement. Mix well and apply hot. A second coat, after the first coat has dried, will insure the stopping of all leaks. Over the last coat, as fast as it is put on, sift some sand and pebbles. The cement hardens quickly, so the sand must be applied while still warm.

Cement for Gutters and Roof Leaks

Use boiled paint skins, to which, while hot and thick, add one-quarter as much fine sand and lime, sifted. The skins form on top of standing mixed paint. Use this cement hot, pouring or smearing it on the leaks, and when dry it will be as hard and impenetrable as iron.

Floor Crack Cements

Take equal parts of air-slaked lime, powdered clay and powdered oxide of iron. Mix all together and then mix to a stiff paste with water. This is a good crack filler.

This makes a satisfactory filler for floor cracks: Make a boiled paste of ½ lb flour, 3 qts water and ½ lb alum, and into it stir as much shredded newspaper as it will take up. The mixture should be about the consistency of putty. It will harden like papier-mache.

A thick, plastic crack filler is made of 1 part powdered air-slaked lime (moisten a piece of lime and let it fall to pieces), with 2 parts rye flour and a sufficient quantity of boiled linseed oil. Mix the dry ingredients well and use the oil hot.

Cheap Cellar Floor Cements

When a more expensive cement is inadvisable, take coal ashes and mix with water to thickness of ordinary mortar. Don't sift the ashes—the stones do no harm. Put this mixture

on the earth floor, about 4 inches thick, let it lie 24 hours, and then tamp it with a heavy block of wood three or four times a day until it is solid. It will last almost as long as regular cement and is certainly cleaner and healthier than the bare earth, as well as acting as a barrier to the entrance of insects and vermin.

Here is another: Sift 2 bushels lime with 1 bushel coal ashes and ¼ bushel loam clay. Mix well and temper with water, stirring it into a heap. Let lie a week to partly dry, then temper with water again. Heap it up again for three or four days, then repeat the water process. It should now be smooth and yielding. It makes, using any amount in same proportions as given, an excellent cellar floor. It can be laid on level ground, and the hotter the weather the better the result is likely to be.

Stormproof Mortar

Mix together 3 bushels clean, sifted sand with ½ bushel each of good lime and cement. Wet with cold water, mix thoroughly, and use at once.

About Putty

The use of putty being indispensable, nothing but the best should be used. The homemade may be a trifle more expensive, but being easily made, and so much better than the commercial putty, the time and money are well worth while. The commercial putty is usually made of Spanish whiting and linseed oil. The homemade, containing lead, is much better. To make putty especially hard and adhesive, mix it with hot glue. This will harden quickly and must be used immediately.

The Putty Knife

A good substitute for the putty knife, which is a necessity to turn out good finished work, especially on window sashes, can be made of an old table knife with the end cut or ground down to a triangular point. This knife will be found very convenient.

To Keep Putty

Do not put putty in paper or cloth, which would absorb the oil and render the putty brittle and useless. Oil silk or bladder is best to keep putty in, or, failing these, use paper saturated with linseed oil, or put in a small, well-covered tin.

To Remove Old Putty

To remove old putty from windows, dip a small brush in caustic soda (concentrated lye) and anoint or paint over the dry putty. In an hour the putty should be easily removable.

Another way is to pass a hot iron slowly over the putty. Any iron that permits a close contact is allowable. It should soften the putty which should be at once removed. Concentrated lye, made of quicklime and potash, in equal parts, applied and left on for some hours, will usually rot off the putty.

To Soften Hard Putty

Break it into small lumps, size of an egg; add enough linseed oil and water to cover the putty, 1-3 oil to 2-3 water; boil in an iron vessel for five minutes, and stir it while hot. The oil mixes with the putty. Pour the water off and mold the putty into shape.

To Color Putty

It is often necessary to color putty. The coloring matter, which is usually oil paint, must be mixed with the oil before mixing with the putty. Then knead well, to incorporate the ingredients.

A Substitute for Putty

Mix plaster of paris and water to consistency of cream. Make only a small quantity, as it hardens swiftly. Before applying, brush the sash or wood with water. For mending windows this is a good mixture where putty is unobtainable.

Filling Cracks and Nail Holes

As putty is affected by the expansion or contraction of heat or cold on metal or wood with which it may be used, it is best to first oil or paint them before applying the putty. Let the paint dry partially, then put on the putty and brush over with paint.

Imperishable Putty

Mix 1 part white lead with 10 parts Spanish whiting and enough boiled linseed oil to make a mixture of proper consistency. A little sweet oil added, when mixing, prevents the lead from hardening and preserves the putty.

About Soldering

Soldering is not so difficult a job as is often imagined and the saving made by a proper use of good material, when needed, amounts to quite a sum in the course of a year. Small household outfits can be purchased at reasonable prices from mail order houses, or may be gathered together at home. The home outfit should consist of solder, a small soldering iron, copper, a vial of prepared muriatic acid, a small alcohol lamp and a lump of resin.

Common Bar Solder

Place in pot or crucible 2 lb of lead and melt it. When melted, add 1 lb of tin and melt together. When cool it can be applied to tin or iron surfaces with powdered resin.

Hard and Soft Solder

An easily flowing soft solder is composed of lead in 1 part and tin in 2 parts. Melt the lead, add the tin and also throw in a small bit of resin. The heat of a lamp or candle will melt this solder.

To make hard solder, melt together 2 parts copper to 1 of tin. Cool and leave in bars.

To Make Solder Wire and Drops

Take a sheet of stiff writing or drawing paper, roll it in a conical form, like the cornucopias sold by confectioners, only broader in proportion to its length. Make a ring of stiff wire to hold it, and attach a handle to this wire. The point of cone must be cut off to leave an orifice for the slow egress of the solder. When filled with melted solder, if held just above the surface of a pail of water, the stream of solder will congeal in wire shape. If held a little higher, it will break into elongated drops before striking the water. By holding it still higher, each drop forms into a thin concave shell. Solder in any convenient form may be made in this easy way.

To Solder Tin

When a hole appears in a tin pan, scrape the surface bright with a knife, sprinkle a little powdered resin over it, lay on a bit of solder, hold it over the lamp until it melts and flows over the fracture. If the pan is old, or rusty, or greasy, use the muriatic acid in place of resin.

Gold and Silver Solder

Put in pot 2 parts pure silver, 1 part clear brass and a small piece of borax. Melt and cool into a bar. Solder made from silver coin melts with difficulty. To make hard silver solder, melt 4 parts of silver with 1 of copper. To make gold solder, melt together 24 parts of gold, 2 of silver and 1 of copper.

To Solder Brass

Cut out a piece of tinfoil the size of the surface to be soldered. Then apply to the surface a solution of sal ammoniac for a flux. Place the tinfoil between the pieces and apply a hot soldering iron until the tinfoil is melted.—[M. P., Ill.

Oil for Whetstones

Good, sweet olive oil is commonly used upon whetstones. In testing a new stone try water first. If it glazes, oil is required. Almost all stones, unless oiled, become glazed or burnished on the surface, so that they no longer abrade the metal. Most stones, after being oiled, give a finer edge than they do in a dry or merely wet state. A dry stone is very apt to give a wire edge to a tool. Some stones, however, work better with water than with oil. Therefore, the test should be made before the oil is used.

For Additional Memoranda

For Additional Memoranda

Dyes, Inks and Sealing Wax

Combining Home Art with Economy

IN case the housekeeper cannot obtain the simple dyes, inks, or sealing wax she requires from the home dealer in such articles, she need only turn to this chapter, and, after a brief visit to the fields or drug store, she will be ready to prepare the necessary article herself, and very likely do the work cheaper than she could have it done outside. Many a penny could be saved if faded garments were dyed instead of being discarded, and thus put into shape to remodel and use again. Inks of various colors, for home and school use, can also be made easily and cheaply, by following directions here given.

Home Dyes and Dyeing

Various prepared dyes for wool, cotton and silk may be procured so easily and at such a small cost in these days that most housekeepers prefer purchasing the commercial dyes to making them at home. Still, the housewifely art of dyeing is not entirely extinct, and therefore no book of household help would be complete unless it contained a few of the simpler directions for dyes and dyeing. Many good garments are discarded when the expenditure of a few dimes and a little time would make them as good as new. A garment may even be dyed several times by using a darker color at each dyeing. In some cases the old color can be removed by boiling the goods in very weak lye water, or using a manufactured bleach which is specially made for this purpose. In using any dye, manufactured or homemade, always be careful to follow directions exactly. These directions are carefully compiled, and deviations mean failure.

To Prepare Goods for Dyeing

Never attempt to dye soiled goods or garments. They should be first thoroughly washed in warm soapsuds, rinsed through several warm waters, and then hung up to dry. When they are half dry they are ready for the dye bath. This bath should be boiling hot and of sufficient quantity to cover the goods well. Put all the goods in at one time and punch and stir them with a stick, so as to keep them well under the dye bath, and evenly distributed. It is best to dye a little piece of the goods first, as a test, and to know the length of time required to secure the desired shade. Cotton or linen goods should never be put in any dye containing sulphuric acid, for it will rot the fabric. It has, however, no injurious effect upon silk and wool.

To Dye Straw Hats Black

Put the straw hats, which should first have been brushed and cleaned, into a boiling bath of logwood for four hours; then remove, and give them an airing, and add a little copperas to the bath solution, after which return the hat to the bath, repeat the boiling, and then allow the liquid to cool down with the hat in it. After drying the hat, dress it with a sponge moistened with sweet olive oil. Use very little of the oil, and dress the hat on both sides, after which press into shape.

Black Dye from Butternut Bark

Boil a large iron kettleful of butternut bark for four hours, then strain out the bark shells and into the liquid put about a spoonful of copperas. A deep black may require a little more copperas, but great care must be used, as too much will rot the goods. While the dye is boiling, put in the goods to be dyed, and keep punching and stirring and moving about, so that all parts may be dyed evenly. If left folded or packed too tight, the goods will be spotted.

Yellow Golden-rod Dye

Country housekeepers have for many years used the full-blown flowers of the golden-rod to obtain a nice yellow dye for carpets, etc. Gather the full blown flowers, boil them with water in a brass or copper kettle, then strain and boil the goods to be dyed in the liquid about one-half or three-fourths hour. After the goods have dried, set the color by plunging them in alum water. This is another way to obtain yellow shades: Cut into small pieces ½ bu of the inside bark of apple trees, place in a wash boiler, fill up ¾ full with soft

water, and let boil eight hours, then strain. Dissolve 3 oz of alum in 1 gal warm water, wring the goods through this wash, and then place in the dye and stir and move around well. After they have boiled in the dye five minutes, hang out to dry. This will make a fast color in either wool or cotton.

To Color White Goods Green

Take 2 pails and put 6 qts of lukewarm water in each. Into one of them put 3 oz sugar of lead, into the other put 6 oz bichromate of potash. When thoroughly dissolved, dip the fabric first into the lead water, then in the potash bath, then in the lead water again, then in the potash bath again, and so on, back and forth, till the color suits. It will make a beautiful yellow. After this make a strong bluing water with liquid bluing, and dip the yellow fabric in this, and it will turn a pretty green. Or instead of the liquid bluing bath, you can fix up a bath of Prussian blue, using 4 oz to each gal of soft water. Keep the yellow goods in this until you get the green shade desired.

To Dye Furs

Prepare some lye strong enough to bear up an egg. To 1 gal of this lye add 2 qts soft water and heat all in an iron kettle. In this lye bath dissolve, one at a time, 1 oz of acetate of lead, 1 oz of sulphate of iron and 7 oz of litharge. These ingredients should all be pulverized. When the bath is blood warm, put in the cleaned furs a few moments only, then take them out, air them, and dip them in strong vinegar, after which slick them off and hang them out to dry. The dye can be made stronger by adding more of the ingredients, and by brushing some of it on the fur afterward, if it is not dark enough. Remember that fur hides should always be handled with the greatest care.

To Dye Wood and Wicker Ware

Unpainted wicker or wood can be successfully dyed with the commercial or homemade dyes. Wet the surface with clear, hot water before applying dye, to make it take the color evenly. If the surface to be dyed has been painted or varnished, this material must be removed before dyeing. (See chapter on paints and varnishes.)

To Color Rags Yellow

This is for white rags only. For 1 lb of rags use 3 oz of alum dissolved in sufficient water. Immerse the clean rags in

this over night. Next morning put a large handful of smartweed in a new tin pan, cover with water, let steep one hour, and then strain through a cloth. Wring the rags from the alum bath and put them in this prepared smartweed water, and keep well covered, stirring frequently. Let stand one hour, then wring out and hang up to dry. To color the rags brown, follow the same directions as above, using butternut bark instead of the smartweed.—[M. W., Vt.

Copper Color and Yellow

Prepare some weak ash lye and add 4 oz copperas to every 6 qts of this lye. Immerse the goods in this bath and boil for 20 minutes. This will produce a pretty copper color. If you want a nice yellow, boil the flowers of golden-rod in the water, about 45 to 50 minutes. After the dyed goods have dried, soak them in alum water, to set the color.—[B. J., Ark.

Pink Dye

To 3 parts cream of tartar add 1 part cochineal. Mix well together and then put about 1 teasp of this mixture in a little muslin bag and steep it in 1 qt boiling water. Into this bath dip the articles to be colored, which were previously cleaned and dipped in alum water. If you want the dyed article to be stiff, put a little gum arabic in the dye bath.—[A. S. B., Mass.

Black Dye

Allow 1 oz blue vitriol to 1 lb extract of logwood. Dissolve the logwood in 5 gals water and boil in clean iron vessel. Add 1 tablesp pulverized copperas. Dissolve the vitriol in a separate vessel in 5 gals water and let boil. Scald the material first in the vitriol water and then in the logwood, letting it remain two hours in the logwood. The goods can be set by washing in a strong lather of homemade soap, and afterward dipping in salt and water, 1 cup salt to 2 pails water.

Brown Dyes

1—A decoction of oak bark dyes will make a fast color for wool, in various shades, according to the amount used. 2—A decoction of walnut bark dyes wool and silk brown. Both this and the preceding are brightened by passing through a rinse of alum water, 1 teasp powdered alum to 2 qts water. 3—A decoction of horse-chestnut shells will impart a nice brown color.

To Color Carpet Rags

RED—Carpet rags may be dyed a bright red as follows: Take 2½ lb of redwood chips, put them in a brass kettle, cover well with water and let them soak over night. Next morning add ½ lb powdered alum and boil till the strength of the chips is boiled out in the water. Strain out the chips and put the rags in the dye and simmer, airing occasionally, until bright enough to suit. This will color 6 or 7 lb of rags.

BROWN—To color brown, for 4 lb of rags, take ½ bu butternut bark (use walnut and butternut bark, half and half, if you want a darker shade), cover with hot water and steep till the strength is out. Then put in the rags and steep an hour, take them out and add 1 oz copperas to the liquor, and bring it to a boil. Put in the rags again and simmer until dark enough. It is claimed that scaly moss from rocks and ledges will color a pretty brown that will not fade. Simply gather the moss, put it in a brass kettle or tin pan, cover with cold water and let boil three or four hours. Skim out the moss, put in the goods and boil until you have the desired color.

DRAB—To color a pretty drab, take ¼ lb of cheap green tea, steep in 1 gal water in a brass kettle, then add 2 tablesp copperas and skim thoroughly. Put in the goods, stir and air till properly dyed. If this should not be dark enough, add more tea. This will color 5 lb of rags.

BLUE—To make a blue that will not fade, for 1 lb of rags take 1 oz Prussian blue, ½ oz oxalic acid, pulverize them together, and dissolve in hot water sufficient to cover the goods. Stir the rags in this dye until they are the desired shade, then wring out and rinse in alum water.

BUFF—To color nankeen, fill a good-sized brass kettle with small pieces of white birch bark and let steep 24 hours, but not boil. Then skim out the bark, wet the rags thoroughly in moderately strong soapsuds and put them into the dye. Stir and air them often, until dark enough, then wash in soapsuds again. This is very pretty and inexpensive and does not fade.

GREEN—Carpet rags can be dyed a "copperas" color by using this simple recipe: Dissolve ¾ lb copperas in a bucketful of hot water. Also have ready a bucketful of lye made from wood ashes. First dip the rags in the lye, then dry in the sun and then dip them in the lye again, etc, alternately dipping them into the lye and copperas water until you have the desired color. The process is more satisfactory if the rags are dried after each dipping.

YELLOW—Half lb sugar of lead dissolved in hot water, ½ lb bichromate of potash dissolved in a vessel of wood in

cold water. Dip goods first in lead solution, wring out and then dip in potash. Do this alternately until desired shade is obtained. To make the yellow a bright orange, slake quicklime, drain off clear, add water enough so the goods will not be crowded and keep at a scalding heat for about an hour.

BLACK—A nice black dye may be made by soaking logwood chips in warm, soft water one day to extract the strength. Strain the liquid and put in the rags to be dyed and let them soak thoroughly, turning them often and moving them about thoroughly. After the rags are well saturated with the dye, take out the goods and air them. Add to the dye bath about 1 ounce of copperas, and when dissolved put the rags in again, proceeding as before. After dyeing enough, hang them out and when dry, wash in suds and sweet milk and then rinse and hang out to dry.

About Inks

All ingredients for inks should be good and used carefully in proper proportions to secure best results. Remember that mold is a vegetable product, and that whatever kills vegetation protects ink from mold. Small quantities of creosote, carbolic acid, oil of cloves, acetic acid or alcohol are effective, recollecting that most of these articles are poisons and should be carefully handled.

Plain Writing Ink

Boil 8 oz coarse powdered nutgalls and 4 oz logwood chips in 12 pts rain water for one hour, then strain the product and add 4 oz green copperas, 3 oz powdered gum arabic, 1 oz blue vitriol and 1 oz coarse sugar. Stir until everything is dissolved, then let it stand for 24 hours, after which strain and put in stone bottles, well corked.

Black Inks

Boil slowly for 15 minutes, 2 oz extract of logwood in 1 gal soft water. Dissolve in a cup of hot water 24 grs bichromate of potash and 12 grs prussiate of potash, and stir this into the first liquid a few moments before removing from fire. Strain twice through cotton cloth. This ink is jet black and indelible.

Put into a stone jar with 1 gal water, ¼ lb bruised nutgalls. Let stand 24 hours, then add 6 oz gum arabic and leave for 24 hours longer. Next add 6 oz copperas, 6 oz gum arabic and 5 drops of creosote. Do not use for two or three weeks, but shake up well every two days. At the end of these weeks, allow it to settle and you have a fine black ink.

Boil 1 lb logwood two hours with 7 lb water. Renew water as it evaporates. After cooling, add 50 grs yellow chromate of potash and strain through a cloth.

Take one package of any standard slate dye and dissolve in 1 pt of soft, boiling water. It will make a pt of excellent jet black ink, at a cost of 10 cents.—[M. A. J., Wis.

The ingredients for a cheap, black ink are 2 oz extract of logwood, ¼ oz sulphate of potash and 1 gal boiling water. Mix well. This is an excellent ink and will cost about 15 to 20 cents a gallon.

Blue Ink

The soluble commercial indigo makes a good blue ink when slightly diluted with water. It flows freely and does not corrode steel pens. Another way is to mix together 3 oz of Chinese blue, ¾ oz pure oxalic acid, 1 oz powdered gum arabic and 6 pts water.

Steel Blue Ink

Procure from your druggist an ounce of the extract of logwood, which can be had very cheaply. Buy also an ounce of bichromate of potash. (Be sure to ask for the bichromate of potash, and do not make the mistake of getting the simple chromate of potash.) Take ½ oz of the extract of logwood and 10 grains of bichromate of potash, and dissolve in 1 qt hot rain water. When cold, pour into glass bottle and leave it uncorked for one or two weeks. Exposure to the air is indispensable. When ready to use the ink is at first an intense steel blue, but becomes quite black.

Red Ink

Mix together 2 grs best carmine, ½ oz rain water, 20 drops ammonia water and a little dissolved gum arabic. Shake well and then strain.

Violet Ink

Boil 16 oz of logwood in 3 qts of rain water down to 3 pts, then add 3 oz of clean gum arabic and 5 oz of powdered alum. Shake well until dissolved. It would be well to strain through a fine sieve.—[P. B., N Y.

Green Ink

Steep the inner bark of black oak until a yellow decoction is secured. By adding to this an equal quantity of strong prepared indigo, a beautiful green ink is made.—[P. D., Me.

White Ink

Mix pure flake white with water containing enough gum arabic to prevent the immediate settling of the substance. Five cents' worth of the flake white will usually make an ordinary bottle of the ink.—[M. A. J., Wis.

Silver Ink

Mix 1 oz of the finest pewter or block tin in shavings, with 2 oz of quick silver, till all becomes fluid, then add to it sufficient gum arabic water to reduce to proper consistency.—[P. B., N Y.

Secret Inks

Mix equal quantities of sulphate of copper and sal ammoniac and dissolve in water. Writing done with this ink is invisible until the paper is heated, when the writing will turn yellow. Lemon juice, milk, juice of onions and some other liquids become black when the writing is held to the fire. To make invisible ink for postal cards, take 2 oz water, ¼ oz cobalt dissolved in a little muriatic acid and ½ dram mucilage of gum acacia. Write on postal with this liquid and it will remain invisible until heated. On cooling, it becomes invisible again.—[M. A. J., Wis.

Maple Bark Ink

A good homemade ink can be made by peeling the bark from a soft maple tree. Put the bark in an iron kettle, cover with water, boil one hour, and then strain and put in copperas enough to make it a jet black. When cold put into a bottle and cork tight.—[M. W., Vt.

Substitutes for Ink

Put a couple of iron nails in 1 teasp of sharp vinegar. In half an hour pour in 1 tablesp strong tea. This makes a pretty good substitute for ink. To make an inexpensive violet ink, take the stubs of indelible pencils, that the children have left from school, about 2 or 3 inches for an ink bottle. Add 2 parts water and 1 part alcohol. To make traveler's ink, soak pieces of thick blotting paper in black ink. Let them dry and then place them in a small tin box. When traveling, where ink is not easily procured, but is needed for use, soak one or more of these bits in a little water and you will have a fairly good ink.—[E. K., Mass.

Copying Ink

Dissolve ½ oz gum arabic and 20 grains Spanish licorice in 13 drams water. Then add 1 dram lampblack previously mixed with 1 teasp sherry. Another way is to take 3 parts common black ink and mix it with 1 part sugar candy.

Printing Ink

This is a good ink for common printing purposes and is very cheap. Simply mix together equal parts of lampblack and oil, keeping the mixture on the fire until reduced to the right consistency.

Ink for Marking Linen or Paper

Dissolve 1 part asphaltum in 4 parts oil of turpentine. Add powdered lampblack sufficient to render of proper consistency to print with type on linen. To make ink for marking packages, take lampblack and mix thoroughly with sufficient turpentine to make it thin enough to flow from the brush. Powdered ultra-marine blue makes a fine blue marking ink.—[M. A. J., Wis.

Ink for Zinc Garden Labels

Mix in an earthenware mortar or vessel, 1 oz verdigris, 1 oz sal ammoniac, ½ oz lampblack and ½ pt water. Shake each time before using, and use with a clean quill pen on bright zinc.

About Sealing Wax

When a scented wax is preferred, add to any of the following formulas 1 oz balsam of Peru or liquid storax, when partly cool. The variegated kinds are usually scented with a little essence of musk or any other preferred fragrant oil. Sealing wax adulterated largely with rosin or containing much turpentine, runs into thin drops on being applied to flame. The old style tin cans, sometimes used for fruit, can be sealed perfectly with sealing wax, which can be removed and used a second time when desired.

Red Sealing Wax

Melt 4 oz pale powdered shellac in a copper pan over a slow fire. When melted, add 1¼ oz Venice turpentine, and then 3 oz vermilion. Cool a little, make into pieces of desired weight, and roll into stick shape on a warm marble slab, or

pour into molds while hot. Here's another recipe for red sealing wax: Mix in same manner as above, 3 lb shellac, 19 oz Venice turpentine, and 2 lb finest cinnabar. Or mix as before, 2 lb resin, 1 lb shellac, ¾ lb red lead and Venice turpentine.

Still another recipe for red sealing wax is as follows: Mix 2 parts powdered shellac, 1 part each of resin and vermilion. Melt them together over a slow fire and when thoroughly mixed and partly cool, work into bars. If black is preferred, substitute ivory black for vermilion.

Soft, red sealing wax is made by mixing 8 parts beeswax with 5 parts olive oil. Melt together and add 15 parts Venice turpentine. Add red lead to color as desired. Green is made by substituting verdigris for red lead. These are much in use for sealing documents and also as a cement.

Black Sealing Wax

Mix as directed above, 60 parts shellac, 30 parts very fine ivory black, and 20 parts Venice turpentine. Or substitute lampblack for ivory. Black sealing wax, good to cover bottles, is made by mixing as usual 1¾ lb black resin, ½ oz beeswax and ¼ lb fine ivory black. Marbled sealing wax is made by mixing two or three different colors, as they begin to solidify.

For Additional Memoranda

Personal Hygiene

Homemade Cosmetics and Soap

SO many busy housekeepers neglect to pay sufficient attention to their own personal appearance and comfort that a chapter on this subject is not out of place in a book of household reference. We are not all born beauties, but neither are we born homely, unless the case be abnormal. A clean, healthy and pleasant person is never homely, while on the other hand a slovenly, sickly or cranky person is never pretty. However our features may differ, if we are normal, we all have hands and feet and hair and complexion that need attention to keep them in good shape or order. The following toilet hints will be found helpful by those who are desirous of preserving in best condition the exterior or "shell" that nature provided.

The Complexion

The complexion is generally a pretty good indication of the health of the individual. No one in poor health can have a really good, clear complexion. The complexion that is "put on" deceives no one and only renders the wearer ridiculous. Some points to be remembered by those who would secure or preserve a good complexion are as follows: Keep bowels regular by natural methods; drink little coffee or tea, but plenty fresh buttermilk or pure water; eat liberally of fruit and vegetables, but stint yourself on red meats; exercise regularly in the open air and sleep enough and in well-ventilated room; wash your face carefully and thoroughly, and use only pure soap and water.

To Wash the Face

The usual quick wash in the morning is not sufficient to keep the skin of the face in fine condition. Every evening, before retiring, wash the face thoroughly in clean, hot water to which a very little borax has been added, and use a pure castile or ivory soap. Rinse thoroughly in clear, cold water and dry gently, always rubbing upward, never downward. Finish by gently massaging with a little cold cream of the best quality, then wipe off with a soft handkerchief. The hot wash opens the pores and removes the tiny particles of dirt lodged therein; the cold water closes the pores and removes the soap, and the cold cream makes the skin soft and fair. The upward massaging prevents the muscles from sagging. The water and soap used must be clean and pure.

To Remove "Black-Heads"

The so-called "black-heads," so disfiguring to the face, are nothing more nor less than plain dirt, stopping up the pores like corks. Pimples may be the result of impure blood, poor digestion or constipation, but black-heads have none of these causes, though they may develop into or cause pimples, because they cork up the secretions of the skin, which set up inflammation. To remove the black-heads, there is nothing better than a daily scrubbing of the face with *hot* water, pure, white soap, and a complexion brush, the latter not too soft nor too hard. The scrubbing is like any other scrubbing operation, but must not be too harsh nor too vigorous. Use a gentle, firm, circular, upward motion. Rinse thoroughly in several tepid waters, and then apply cold cream. Do this before retiring, and the next morning wash gently in warm water (use no soap) and rinse in cold water, after which apply a little astringent toilet water. If the skin is tender and sensitive, a scrubbing two or three times a week is enough.

To Remove Pimples

Pimples or boils are caused by impure blood, and therefore the cure must be effected through the blood. Diet and regular bowel movements are important. Drink fresh buttermilk and plenty of pure water, and eat liberally of vegetables and fruit, but avoid red meats, pastry and sweets. Take plenty outdoor exercise and sleep in a well-ventilated and airy apartment. Keep clean, physically, mentally and morally, and be temperate in all things, including eating and drinking. Wash the face with hot water and pure soap, rinse with cold water, and then apply some astringent toilet water. Spirits of camphor applied to the pimples has a tendency to dry them.

Massaging

There are two ways of massaging. One puts on flesh and the other takes it off. Light massaging will do the first, and heavy, hard massaging will do the latter. The movements in either case should be firm and circular, upward for sagging muscles and across lines or wrinkles. Before massaging, wash clean in warm water and pure soap, and rinse thoroughly. Apply a good cold cream or skin food free from animal fats (the latter is apt to cause hairy growth), using the finger tips. Massage five to ten minutes, and then wipe off.

About Bathing

Frequent bathing is conducive to good health as well as comfort. It keeps the pores of the skin clear, so that they can perform their proper function of clearing the system, through the skin, of excretions which are not discharged through the mouth, nose or alimentary canal. Rinse with cold water. A brisk rub after the bath promotes circulation of blood.

Cosmetics for the Skin

As a general thing cosmetics of all kinds (except the most simple and harmless) should be avoided. Rouge and powders, although they may not be detected, cannot fail to injure the skin, whatever may be said to the contrary. On the other hand, simple washes, lotions, etc, are not only entirely innocent, but in many instances are beneficial, as well as refreshing.

An infusion of horse-radish in milk is said to be a good cosmetic for the skin. Horse-radish steeped in vinegar will remove freckles or bleach them so that they will be less noticeable. The same is true of buttermilk, which whitens and softens the skin.

Mix together equal parts of glycerin, bay rum, rose water and witch-hazel. This is excellent for rough skin, and especially good after shaving.—[A. S. B., Mass.

To 2 oz cologne add 1 oz benzoin and ½ oz spirits of camphor. Use 1 teasp in a basin of clear, cold rinse water.

When clean, soft rain water is not obtainable, soften well or spring water by adding a little toilet ammonia or pure borax.

This is a nice wash, but should be used only in cool or cold weather: Mix together 1 lb flake white with 1 oz glycerin and 1 oz oil of citrinila, pour on 2 qts boiling water, and gently boil ten minutes, then add a little extract of alkanet to color it pink. When cool, put in bottles and cork.—[M. S., Tex.

This is a simple and harmless face wash, to use in place of powder: Half fill a bottle with Epsom salts, and then fill the bottle with rose water or equal parts of cologne and water. Shake until dissolved. After washing and drying, apply this to face, neck and arms, and rub until dry. This is a nice, velvety tonic which does not look "powdery."—[B. G., Mich.

Soak ½ oz gum tragacanth in 3 pts soft, hot water 24 hours, then strain and add ¼ pt each of pure alcohol, glycerin and rose water.—[Mrs F. A., Ore.

This is a good cucumber wash: Slice cucumbers fine, cover with water, let simmer ½ hour on a slow fire and then strain. Add 10 drops of benzoin to each pt of clear cucumber fluid. Shake well and use as a face wash. This is good to apply to the face after it has been steamed and the pores cleansed. [L. J. P., Ore.

Freckle and Sunburn Lotions

To 1 pt spring water add 1 dram muriate of ammonia and 2 drams lavender water. Apply carefully with a small sponge 2 or 3 times a day. Another pleasant bleach for light freckles is made by mixing together equal portions of peroxide of hydrogen and aqua of ammonia.

To ½ dram oxide of zinc add ¼ dram subiodide of bismuth, 1¾ drams dextrine and 1½ drams glycerin. Apply to freckles before retiring.—[F. E. F., O.

To 1 oz lemon juice add ¼ dram borax and ½ dram sugar. Bottle and let stand three days. Apply to freckles before retiring.—[C. S., Okla.

Here is a good freckle lotion: Mix together 1 qt rain water, 1 oz benzoin, 1 oz aqua ammonia, 1 oz rose water and 2 oz glycerin. Shake before using.—[C. L. A., O.

For freckles apply a mixture of 1 fluid dram each of acid lacti and glycerin.—[W. N., Tex.

To remove sunburn bathe with a fresh infusion of sliced cucumbers in milk. A decoction of tansy mixed with buttermilk is also good. Witch-hazel is always efficacious, as is also a good cold cream, applied before retiring.

A good lotion to lighten "moth patches" is made of ½ dram salicylic acid and 2 oz bay rum. Any freckle lotion can be used.

Cold Creams and Salves

Melt and mix together 1 dram each of white wax and spermaceti and while warm add 2 oz each oil of almonds and rose water, and ½ oz orange flower water. Beat well until the mixture is of a creamy consistency. Put into small jars, cover well, and set away in a cool place.

An excellent skin food is made as follows: Melt and mix together ½ oz each of spermaceti and white wax, 1 oz each of cocoa butter and lanoline, and 2 oz of sweet almond oil. Remove from fire and add 1 dram tincture of benzoin and 2 oz rose water. Beat until cold.—[C. S., Okla.

This is a greaseless face cream: Put 1 oz almozoin in a fruit jar, add ½ pt cold water and 2 teasp glycerin, stir five minutes, then let stand until it is a jelly. Use it as you would cold cream. Apply and let it remain a moment on the skin, then rub with finger tips and remove with soft cloth.—[E. P., Mass.

A nice cucumber cream is made of 4 oz almond oil, 1 oz each of spermaceti and white wax, and 2 oz cucumber juice. Select ripe cucumbers, chop them fine, pound to a paste, and extract the juice by squeezing through a jelly bag. Perfume with ½ dram of violet extract. Melt the spermaceti and white wax by putting them in a porcelain dish placed in a saucepan of boiling water, then add almond oil and cucumber juice. Beat until cold.—[Miss M., Neb.

Here are the ingredients for orange flower cream: Six drams each of white wax and spermaceti, 2 drams borax, 1½ oz glycerin, 2 oz orange flower water and 15 drops oil of neroli. Put the wax, spermaceti and the oils in a porcelain dish, placed in boiling hot water and heat until the ingredients are melted. Dissolve the borax in the orange water, then mix in the glycerin and pour gradually into the first mixture. Beat until cold, adding neroli while beating.—[Miss M., Neb.

A good lip salve is made as follows: Melt together with gentle heat ½ oz cocoa butter and ¼ oz oil of almonds; then add 6 drops essence of lemon. Mix well and pour into small molds to cool.

To Whiten the Hands

Cut up fine ¼ lb pure castile soap, put in a jar in a warm place near the fire, pour over it 1 pt of pure alcohol and cover. When the soap is all dissolved and well mixed with the alcohol, add 1 oz each of glycerin and oil of almonds, with a few drops of essence of violets or otto of roses. Pour into small molds and cool.

This is the way to make camphor tablets for chapped hands: Melt some clean tallow and add a little powdered camphor and some glycerin, with a few drops of oil of almonds to scent. Pour into small molds and cool.

A nice wash for the hands to prevent cracking and keep them soft, is as follows: To 2 oz glycerin add 2 oz rain water, ½ oz camphor, ¼ oz turpentine, ½ oz hartshorn (ammonia) and 5 drops carbolic acid. Mix well and keep corked tight.

Shake before using. Apply twice a day, or if hands are bad, every time after you wash.—[M. J. L., Mich.

To prevent chapped hands, after having them in water, rub them each time in a stiff mixture of corn meal and a little vinegar, or with dry oatmeal. Can be used over and over again.

Mix equal parts of glycerin and lemon juice, or equal parts of glycerin and listerine. Equal parts of bay rum, rose water and glycerin is another good mixture. Mix strained juice of two lemons with 1 oz glycerin and add 20 drops carbolic acid. Or to 2 oz rose water add 2 oz glycerin and 4 oz rain water.

Face Powders

Fine, precipitated French chalk, or rice or talcum powder are the most harmless of face powders. White starch is also used, 1 lb of this sifted with 4 oz oxide of bismuth. Any cosmetic powders containing white lead should never be applied to the skin, as it is the most dangerous article that can be used. In general, face powders are not to be recommended, as they fill the pores and often cause skin troubles. However, there are times when they are very useful and one should always have some on hand.

Beet Rouge

This recipe is over a hundred years old, is easily prepared and entirely harmless. Take the raw, red beets, and after carefully washing and drying them, rub them over a grater and thus extract the juice. The liquid can then be mixed with a like quantity of pure alcohol and a few drops of rose water or oil of lavender added, to perfume. Strain, bottle and cork tightly. Another recipe calls for 1 oz of alkanet root steeped in ½ pt pure alcohol about ten days. The liquid may then be poured off, strained and bottled.

To Remove Perspiration Odor

Frequently bathe the parts with a lotion made of 1 dram alum and 1 pt water, or 1 pt water and 2 heaping teasp bicarbonate of soda. A powder composed of 1 oz alum, 2 oz orris root, and 2 oz powdered rice will also help to check excessive perspiration.

Toilet Soaps

There are always small pieces of good toilet soap left over in every household, and too often these are wasted. Collect

them and weigh out half their weight in fine oatmeal. Put the soap into a pan, add just enough water to dissolve it, without scorching. When dissolved, add the oatmeal and a few drops oil of sassafras. Turn it into a pan to cool and when cool cut it into small cakes and let them stand a few weeks to harden. [E. K., Mass.

Scrape fine 1 lb pure castile soap. Put it over the fire with a little water and stir it to a smooth paste, then turn it into a bowl and when cool add some lavender water or any kind of essence preferred, and beat with a silver spoon till well mixed. Thicken it with Indian meal and keep it in small pots closely covered, as exposure to the air will harden it.

Melt together 1 lb of white soap, cut fine, and 1 oz of spermaceti, with water only just sufficient to mix. Then remove from fire, add 1 oz powdered camphor, and beat well. Put into molds to harden.

Cut into very small pieces 3 lb white soap and melt it with ½ pt strained water in which 3 sliced lemons have been boiled. When melted remove from fire and add 1 lb powdered starch or fuller's earth and a little essence of lemon. Knead the whole into a paste and form into bars of the desired size.

Melt together 1 lb white soap, cut fine, and 2 oz spermaceti, and when cool beat in 1 oz alcohol, 1 oz carbolic acid and a few drops oil of lemon.

A nice shaving paste is made as follows: Melt together 4 oz best white soap and ½ oz each of spermaceti and olive oil. Remove from fire, stir and when nearly cold add a few drops of any preferred essential oil—lemon or almond are generally used. This paste produces a good lather with either hot or cold water, and does not dry on the face. Do not pour water on the soap, but put a small quantity of the latter on the face, and then apply a wet shaving brush to distribute it and rub it in.

Make a flannel bag about 4x6 inches, put in it all the bits of toilet soap too small for other use, and use the bag as you would a cake of soap. By mixing in oatmeal a nice bath bag is obtained.

Perfumery

The too lavish use of perfumery of any kind should be avoided, as it shows a lack of taste and refinement. In moderate quantities fine perfumery is used by the most cultivated and genteel persons; it is only the excess that is improper. The various kinds of odor colognes are the most popular and most generally used perfumes.

To Extract the Perfume of Flowers

Procure a quantity of the petals of any flower which has an agreeable flavor. Comb thin layers of cotton wool, dip these into the finest Florence oil. Sprinkle a small quantity of fine salt on the flower petals and then place alternate layers of oil, cotton and flowers in an earthen or wide-mouthed glass vessel, until the same is quite full. Tie the top close with a bladder or oiled paper, and put the vessel in some place where it will be exposed to the sun, moving it around so as to keep it in the sun as long as possible. In about two weeks a fragrant oil may be squeezed from the whole mass. If roses are used, this oil will be almost as fine as the highly valued and expensive otto of roses.

Perfume Powder

This is a nice powder to put in bags and distribute in shirt-waist boxes or bureau drawers. Mix together 2 oz each of coriander powder, Florentine orris powder, powdered rose leaves and powdered sweet scented flagroot, 4 oz powdered lavender flowers, 1 scruple musk and 1 dram powder of sandalwood.

Perfumery Bags

Besides being a very pleasant perfume, the following also acts as a preventive against moths: Mix together 1 oz each of ground cloves, carraway seeds, nutmeg, mace, cinnamon and Tonquin beans. Then add as much Florentine ground orris root as will equal the other ingredients put together. Put them in little bags and distribute these among your clothes, in bureaus, closets, etc.

Otto of Roses

Fill a large glazed earthen jar with rose leaves, discarding the flower cups, leaves, etc. Pour enough spring water over the rose leaves to just cover them; then set the jar with its contents in the sun for two or three days, taking it in during the night. At the end of the third or fourth day small particles of yellow oil will be seen floating on the surface of the water. This, in the course of a week or so, will have increased to a thin scum, which is the otto of roses. Take this up with a tiny, fine sponge or with a little cotton, and squeeze the precious otto of roses into a small bottle.

Extract of Bouquet

Mix together 1 pt pure alcohol, 2 drams each of oil of

lavender, oil of cloves, and oil of bergamot, 20 drops each of otto of roses and oil of cinnamon, and 1 dram essence of musk.

Violet Water

To 1 pt of pure alcohol add 2½ oz fine orris root and ½ oz violet powder. Let stand 1 week, shaking frequently, then filter and bottle.

Lisbon Water

To 2 qts fine alcohol add 1½ oz each of the essential oils of orange peel and lemon peel, and ⅛ oz otto of roses. Bottle and cork well. Let stand a week and shake well each day, after which it will be ready for use.

Essence of Lemon or Orange

To ½ pt pure alcohol add 3 oz orange peel cut small (use only the yellow part of the orange), 1 dram powdered orris root, and 2 grains musk. Let stand in a warm place for three or four days, then filter and bottle. For lemon essence, use the lemon peel instead of orange peel.

Essence of Lavender

To 1 qt of pure alcohol add 2 oz essential oil of lavender, ¼ pt of rose water and ¼ pt tincture of orris. Lavender water is made by mixing together 1½ qts alcohol, ½ pt rose water and 2 oz oil of lavender.

Essence for Smelling Bottle

The smelling bottles may be filled with any porous absorbent material, such as asbestos or sponge cuttings, that have been well washed and dried. Mix together 1 pt strong aqua ammonia, 1 dram each otto of rosemary and otto of English lavender, and ½ dram each oil of bergamot and otto of cloves. Shake well in a well-corked bottle, then pour over the filler contents of the smelling bottle and cork well. Another recipe calls for 1 dram each oil of lavender and essential oil of bergamot, 8 drops oil of orange peel, 4 drops oil of cinnamon, 2 drops oil of neroli and 2 oz each of pure alcohol and aqua ammonia.

Incense

Mix together 2 oz powdered cascarilla and 1 oz each myrrh, stajrax, benzoin and Burgundy pitch. Form into small cones.

Jots

Give your face and neck an occasional bath in sour milk or buttermilk. You will find them great complexion beautifiers. [J. S. A., Vt.

Use lemon juice and pumice stone to remove stains from hands.—[A. G., Mass.

Bathe oily or shiny nose with borax water, or wash with corn meal, instead of soap.—[B. E., Ore.

Bran will make hard water soft and is good for the skin. Put the bran in a cheesecloth bag. A few drops of tincture of benzoin or toilet ammonia will also soften water and make it agreeable to the skin. Do not use too much.—[F. E. F., O.

The Hair

Every man, woman and child desires to have a nice head of hair. How to preserve it if you have it, and how to secure it if you haven't it, is a vexing problem to countless people, as witness the large sales of hair tonics, washes, electric brushes, wonder combs, etc. But the only way to solve the problem is to go to the root of the matter. This root is good health —which means proper food, exercise, sanitation and ventilation, plenty of fresh air at all times, and an optimistic mind which refuses to worry. Do all in your power to secure these essentials to good health, and the battle is more than half won. Proper tonics will do the rest.

Care of the Hair

If the hair is oily it will need to be washed every two or three weeks; if not, every four or five weeks is frequent enough. Use only pure castile or ivory soap, with the addition of a very little borax. Make a nice warm suds of this, wash carefully and rinse thoroughly, first in clean, warm water and then in clear, cold water. Rub gently with a towel and then go out in the sunshine and keep moving around until the hair is dry. Do not comb or brush the hair until it is perfectly dry. Fresh air with sunshine is one of the best hair tonics. Clip the hair about ½ inch once every month. Brush gently every evening before retiring to remove the day's accumulation of dust and dirt. A little vaseline rubbed about the roots of the hair is good for a dry scalp, or pure bay rum for an oily scalp, but do not use too much. Never use curling irons. Remove all pins and braid the hair loosely before retiring. Never wear "rats" or false puffs, and don't use any more hairpins than necessary. Wear light hats that permit free ventilation.

Hair Shampoos

Shave fine a 5c cake of best castile soap, dissolve in ½ pt rain water with gentle heat, partially cool, then stir in the beaten yolk of 1 egg and strained juice of 1 lemon. Stir until cold, when it will be ready for use.

A nice shampoo mixture for a blond is made as follows: Dissolve 1 oz salts of tartar in 1 qt clean, lukewarm rain water (not hot), then add the strained juice of 3 lemons. Rub into the scalp and about roots of hair, and rinse well in several warm waters, the last rinse to be cold water. Dry in air and sunshine.

One tablesp pure borax to 2 qts warm water makes a good shampoo. Use more or less borax, according to condition of hair—if very greasy more; if not greasy, less. Too much borax cannot be used, as water will only dissolve a given amount. Thorough rinsing in several pure waters is necessary.

Hair Brushes and Combs

In order to have a nice head of hair one must have a clean scalp, and to keep the scalp clean one must use only clean combs and brushes. Wash frequently in ammonia water, rinse in several clean waters, and dry quickly in open air. Only the bristles of the brush should be put in the ammonia water. Use a shallow dish.

About Hair Dyes

Dyeing the hair is a practice not to be recommended, for several reasons. In the first place, nature makes the hair and the complexion to match, and if one or the other is changed, there is lack of harmony. Hair dyes color the hair only as far as the roots and require to be applied frequently, as the growth of hair shows both the false and real color. The lead which forms so large a part of the various hair dyes in general use is injurious, if not actually dangerous. Headache, neuralgia, paralysis, etc, have in numberless cases been caused by lead preparations for the hair.

To Prevent Hair Turning Gray

It is claimed that an undue proportion of lime in the system is the cause of premature gray hair. If this claim is correct, it would be well to avoid using hard water for drinking or washing. A good remedy for hair which threatens to turn gray and fall out is the following: To 1 part bay rum add 3 parts olive oil and 1 part brandy, by measure.

Hair Tonics

To 2 oz glycerin add 1 oz tincture of myhrr, 1 oz cologne, ½ oz tincture of cantharides and 24 oz distilled water.

To 1 pt bay rum add ½ pt alcohol, 1 oz castor oil, ¼ oz carbonate of ammonia and ¼ oz tincture of cantharides. Shake well before using. Apply daily.

Mix 1 oz carbonate of ammonia with 1 pt of sweet oil and apply daily until the hair stops falling out, or the new hairs have started to grow.

Strong sage tea as a daily wash will promptly stop the hair from falling out, it is said, and if its use is persevered in, will cause the hair to grow thick and strong.

To ½ pt alcohol add 1 qt best olive oil, 2 oz bay rum, 20 grains quinine, 1 oz borax, 2 oz castor oil, 1 oz camphor, and a few drops of any of the essential oils you like.—[F. I. R., N H.

To 2 oz glycerin add 30 grains quinine, 4 oz witch-hazel, 4 oz bay rum, 2 oz salt and 1 pt of rose water. Rub well into the scalp two or three times a week.—[F. B. H., Okla.

To 1 oz borax add ½ oz gum camphor. Pound these ingredients fine and dissolve in 1 qt hot water. When cool, the solution is ready for use. The camphor may form into small lumps, but this will not affect the utility of the tonic, as the water will be sufficiently impregnated.

To 1 qt rain water, add 5-oz package of dried tansy. Boil down to half, then strain through a cloth and add 2 oz glycerin and 4 oz bay rum. Cork tightly and set away in a dark place two weeks. Wash, rinse and dry the hair before using. Use this tonic every night for a month.—[A. A. S.

Mix well together 2 pts bay rum, 1 pt alcohol, 1 oz each castor oil and tincture of cantharides, and ½ oz carb ammonia. This compound will promote the growth of the hair and prevent it from falling out, it is claimed.

Boil 2 tablesp red Peruvian bark in 1 pt soft water, then strain and add 1 tablesp borax and 5 or 6 drops of your favorite essential oil. Shake well before using. Apply once or twice a week, rubbing it well into the scalp.—[E. M. F., Kan.

Here is another recipe: To 2 pts bay rum add 1 pt alcohol, 1 oz castor oil, ½ oz carbonate ammonia and 1 oz tincture of cantharides.

To ½ pt castor oil add ½ oz alkanet root, 10 minims each oil of bergamot and oil of cloves and 1½ grains civet. The castor oil must be gently heated; when sufficiently hot, it should be poured upon the alkanet root, which immediately communicates its color. It must then be strained, and, when cold, the other ingredients are to be stirred into it. This oil will strengthen and improve the hair in every respect.

Hair Dressings

A good hair dressing is made by dissolving 4 oz pure glycerin in 12 oz rose water. Glycerin does not evaporate readily.

Another recipe calls for 1 qt olive oil, 1 dram otto of roses and 1 dram oil of rosemary. This mixture may be colored red by adding a few drops of tincture of alkanet.

Steep 1 tablesp of garden sage in 1 cup of boiling water; when cold strain. Wet the head at night all over and let it dry before braiding. This prevents the graying of the hair and is an excellent dressing. It keeps the hair glossy, clean and soft.

To make the hair soft and glossy, apply this mixture every morning and brush well: To 1 pt best French bay rum add 1 oz castor oil. Color with a little tincture of alkanet root and perfume with a few drops of oil of lavender.

To 3 parts sweet oil add 1 part brandy. This, if used persistently, will help the hair wonderfully. Rub well into the scalp.

Dandruff Cures

Mix well together ½ dram carbolic acid, a few drops oil of bergamot and 2 oz glycerin. Rub thoroughly into the roots of the hair and follow by liberal application of the best bay rum. This used once a week will prevent dandruff from forming, keep the scalp healthy and make the hair soft and glossy.

Dissolve ½ teasp refined powdered borax in 1 cup water. Part the hair and apply to the scalp with a small brush. Finish up by shampooing the hair, rinsing thoroughly with cold water and drying where the sun and air can get at it. Do this once or twice a week and the dandruff will be removed.

A mixture of 1 tablesp pure, fresh lard, to which a few drops oil of geranium or bergamot has been added, will remove the milk crusts from baby's head and also soften the dandruff crusts sometimes found on young children's heads. After the dandruff has softened it can be easily combed off. The head should then be washed with weak borax water and carefully rinsed with clear water.

Rub together 2 oz lard and 2 drams diluted sulphuric acid. Anoint the head once a day.

Hard brushes and small-tooth combs should not be employed to remove dandruff. Wash the scalp every week and use some reliable dandruff cure.

It is said that onion juice has a stimulating effect and is of service in restoring tone to the scalp.

Hair Curling Fluids

To 2 oz borax add 1 dram gum arabic and 1 qt hot water. As soon as the ingredients are dissolved, add 3 tablesp spirits of camphor. Wet the hair with this before putting it up in curlers.

Mix together 1½ drams gum tragacanth, ½ pt water, 3 oz alcohol and 10 drops otto of roses. Cover and let stand 24 hours, then strain.

Another mixture is made by pouring about 1 tablesp boiling water on 1 dozen quince seeds. This mixture should be made fresh every time it is wanted.

Another plain curling fluid is made by simply dissolving a small quantity of gum arabic in hot water. Use a weak solution of this.

Care of the Teeth

If the teeth and mouth were always kept clean there would be fewer complaints about decayed teeth and toothaches. Begin with the milk teeth, take proper care of these and those that follow, and your tooth troubles will be few and far between. Clean the mouth after each meal. Rinse with water to which has been added a little lemon juice or salt, or alum, or borax, or bicarbonate of soda, or tincture of myhrr, or listerine, or peroxide of hydrogen—anything that is cleansing and antiseptic. Use the toothbrush up and down as well as crosswise, and on the inside of the teeth as well as on the outside.

Tooth Powders

Some prepared tooth powders contain powerful acids, which will remove stains, but are harmful to the enamel, and therefore should be avoided. The following are as harmless as they are effective:

To 1 oz of prepared pulverized charcoal add 3 oz precipitated chalk.

Mix 1 part of precipitated chalk with ¼ part powdered orris root and ¼ part borax.

To ½ oz prepared chalk add ½ oz ground camphor, ½ lb ground orris and ½ lb of rose pink.

To 1 oz orris root add 6 oz precipitated chalk, ¼ oz bicarbonate of soda, ½ dram essence of violets, and rose pink enough to give it a pale violet color.

Liquid Preparations for the Teeth and Mouth

Mix 3 oz tincture of myrrh with 1 pt of cologne. Bottle, let stand 7 days and then filter. Another recipe calls for 4½

oz camphor, 2 oz myrrh, 36 fluid oz rectified spirits (refined alcohol), and 8 oz distilled water.

This is a good lotion for cleansing the mouth, removing unpleasant odors, and for purifying the breath. To 1 oz of liquid chlorinated soda add 19 oz of distilled water. Use a teaspoonful of this mixture in a glass of water.

Mouth Pastiles

These are nice for perfuming the breath: Mix together 3 oz extract of licorice, 1½ drams oil of cloves and 15 drops oil of cinnamon. Divide into 1 grain pills and coat with confectioner's sugar. Another compound, which is also good for disinfecting the breath, is made by mixing together 2 drams dry chloride of lime, 8 oz powdered sugar, 1 oz corn starch and 1 dram gum tragacanth, colored with 2 grains of carmine. Form into small lozenges.

Tinctures for Toothaches

These are applied by moistening a little cotton wool or lint with the liquid and introducing into the cavity of the decayed tooth. Where there is no cavity they are sometimes applied to the gums surrounding the affected tooth. The cavity should be dried with lint before applying the remedy. Keep bottles out of the reach of children.

Mix aqua ammonia with ½ the quantity of tincture of opium. Another recipe calls for 1 dram creosote, 2 drams spirits of camphor. The creosote and camphor may be mixed or either one may be used alone. Another recipe for toothache drops calls for 1 oz pure alcohol, ½ oz camphor, 1 scruple opium and 80 drops oil of cloves. Still another calls for 4 drams each of alcohol and creosote and 4 drops oil of peppermint.

Get your druggist to put you up the following magic preparation to cure toothache: One dram laudanum, 4 drams camphor, ½ dram oil of cloves, 1 dram oil of lavender, 1 oz alcohol, 6 drams sulphuric ether and 5 fluid drams chloroform. Rub on face or gums. Also good for face neuralgia. It cost me 35c to have this prescription filled, but it's worth all that, and more.—[W. M. G., N J.

Saturate a small piece of absorbent cotton with tincture of benzoin. It will cure the toothache at once, will leave a pleasant taste, and will benefit the gums instead of blistering. It is an excellent remedy for children.—[F. E. F., O.

Cement for Filling Teeth

The following is a hard cement and intended to remain

in the tooth for an indefinite time. In all cases the cavity of the tooth must be previously cleared from all extraneous matter and wiped perfectly dry. Mix 12 parts of dry phosphoric acid with 13 parts of pure pulverized quicklime. This will become moist in mixing, and while in this state it should be introduced into the cavity of the tooth. It hardens quickly. Gutta percha, softened by heat, is also recommended as a filling for teeth.

Care of the Feet

People would never suffer from burning and aching feet if they would bathe them every night. Add soda to the bath to allay soreness, or salt to harden them. The soles of the feet are full of sweat glands and are greatly benefited by bathing. It takes only a few minutes before retiring. After the bath, rub with alcohol.

Corn and Bunion Remedies

Soak a piece of copper in strong vinegar for 12 or 24 hours. Pour the liquid into a bottle. Apply frequently till the corn is removed. This preparation is a poison and should not be used on the corn if there is any cut or opening in the skin.

Another corn remedy is made by mixing 1 oz of finely pulverized carbonate of soda with ½ oz pure lard. Apply on a linen rag every night.

Take 2 oz gum ammoniac, 2 oz yellow wax, 6 drams of verdigris and melt them together and spread the composition on soft leather. Cut away as much of the corn as you can, then apply the plaster and renew it every fortnight till the corn is removed.

Touch a soft corn with a little turpentine every night for two weeks and it should come out easily. Apply with a small camel's-hair brush and be careful not to touch the adjoining skin.—[F. T., N D.

Put a slice of lemon on the corn and wrap a cloth around the toe. Do this every night for a week. Or poultice the corn for five or six days with a mixture of glycerin and borax on a small piece of cotton, and cover with oiled silk. Tincture of iodine applied to the corn every day till cured is another remedy.

Boil the tender outer layer of an onion, apply it to the corn warm, and secure with a bandage. Do this every night for a week. Another way is to poultice the corn every night for a week with bread soaked in strong vinegar.

A good bunion plaster is made of pulverized lime mixed with equal quantity of lard. Spread on a piece of white silk and put on the bunion. Do this for a week, and bathe the

feet in soda water every night before applying the plaster, which should be made fresh every time.—[Mrs G., N Y.

Frosted Feet and Chilblains

Never allow pressure on the affected parts. Shoes that are ordinarily large enough become too small, because the feet swell from frostbite. When feet become frosted, rub them at once with snow, using plenty of hard snow and "elbow grease," and then wrap the feet in flannels.

Carbolic acid salve is said to be a good remedy, and bathing in salt and vinegar gives relief. Painting with tincture of iodine is another cure. This must be repeated three nights in succession. An ointment for frosted feet is made of 2 parts lime and 1 part lard. Apply once or twice a day. A foot bath of strong tea made of beech leaves is also recommended. Soak feet half-hour, two or three nights. Raw onion juice applied frequently will allay the intense itching. Bind cotton over the affected parts steeped in a very strong alum solution.

A good mixture for frost bites is made of equal parts of olive oil, spirits of turpentine, aqua ammonia and oil of peppermint. Apply night and morning. A cure for cold feet is made of 8 oz lard and 1 dram powdered cayenne pepper. Apply every alternate night, and every odd night bathe the feet in cold or almost cold sal soda water, and after drying rub with alcohol.

For Ingrowing Toe Nails

Take a piece of broken glass or a file and scrape the nail very thin from the middle of the bottom to the top. Then cut the nail straight across the top and make a V at the middle top of the nail. Where the nail protrudes into the flesh, raise nail with a thin knife and insert a small piece of cotton under the nail. Be careful not to cut into the flesh. [C. L. A., O.

Wart Cures

Warts can generally be removed by the application of strong acetic acid or chronic acid, but great care must be used when applying the acid, not to get it on any of the neighboring skin, as it would occasion inflammation and much pain. Cut a hole the size of the wart in a little piece of court plaster and put this on before applying acid. Remember that saleratus (baking soda) will counteract the action of the acid. Never try to remove warts from elderly people, or when the warts appear irritated, as they are apt to degenerate into a malignant cancerous growth.

Long warts can be tied with fine, white silk and treated to a solution of soda or Epsom salts two or three times a day, when they will soon drop off. A mixture of 2 parts nitric acid to 1 part muriatic acid is a good remedy for warts. Touching the wart daily with aquafortis or nitrate of silver is another cure. The application of lunar caustic is also recommended. Pare the wart and repeat until cured. The juice from milkweed is also said to cure warts.

Rose Jar

Save all petals of roses and any other fragrant flowers and the foliage of rose geranium, and make old-fashioned "rose jar" of them as follows: Spread petals thinly on paper and thoroughly dry in an airy and sunny room. Then mix with salt, ground nutmeg, cinnamon, cloves, allspice and a few bay leaves broken in small bits. A few drops of essential oils are fine to add to it, if one can afford it, also some ground orris root or sachet powder is desirable, but may be omitted. Place the mixture in closed jars and stir occasionally. It will not be fragrant until it matures, which takes about a month. A little placed upon a warm pie tin or stove lid will perfume a room agreeably. It retains its fragrance and keeps indefinitely. Always keep jar covered when not in use.

For Additional Memoranda

Health Hints

Homemade Cures and Remedies

SOME remedies, and those prescribed by physicians, have their uses, but the great triumphs of medical science in the future will be along the line of disease prevention. The doctor who points out the way to prevent a case of typhoid fever is a greater benefactor to mankind than the physician who cures a case. The homely old adage, "An ounce of prevention is worth a pound of cure," was never more apparent than today. Don't get mad when your doctor tells you that your case of typhoid fever is caused by your well being too close to the barnyard; or your case of diphtheria caused by a neglected and dirty sink spout; or your scarlet fever by an uncovered water closet; or that your tired, neuralgic, nervous and discouraged wife is suffering from slow poisoning from lead pipe water. If you have not sufficient confidence in your family physician to take his advice, consult some expert on sanitation, and follow his advice, no matter to what expense or inconvenience. Better spend money to secure sanitary conditions and preserve the health and working ability of the family than to let it find its way into the pockets of doctors, druggists or undertakers. Remember that health is normal, sickness and disease abnormal. But while you are striving to get back to normal condition, here are a few hints and remedies that may prove useful.

In Cases of Poisoning

In the first place, preventive is better than cure. Label all poison bottles carefully and keep them in a separate place, apart from other medicines or remedies. Whenever you buy a remedy of any nature containing poison, attach to the can or bottle a label plainly marked with the antidote for that poison. As a general rule, it is well to remember that acids are antidotes for alkali poisons and alkalies antidotes for acid poisons.

It is necessary, in all forms of poisoning, for the sufferer to vomit, and an emetic is the readiest way to accomplish this. Give 1 tablesp mustard stirred in a cup of lukewarm water, or 1 teasp salt in a cup of warm water. One or 2 tablesp syrup of ipecac is also an effective emetic. If the patient is unconscious and not able to swallow readily, pry the mouth open and depress the tongue with a spoon. After that, pressing the jaw at the joints will usually force the mouth open.

When the mucous membrane of the mouth is much inflamed or destroyed, give raw eggs, flaxseed tea, flour stirred in water and boiled, or any soothing drink. Stimulation can be accomplished by means of hot water bottles or bags to the feet and over the heart, and by rubbing the extremities. Alcoholic stimulants are not to be recommended, and if used at all, should be given very cautiously.

Some poisons paralyze the stomach so that emetics will not act, in which case the stomach must be washed out. Take a long piece of rubber tubing from a fountain syringe, put a little oil or vaseline on the end of the tube, hold the tongue down with the spoon, push the tube as far back in the mouth as possible, that it may enter the food passage, and not the air tract. When about 8 or 9 inches of the tubing has passed down, attach a funnel to the other end of the tubing, and holding above the head, pour in 2 or 3 pts lukewarm water. After this lower the funnel below the level of the stomach, and the water will run out. Repeat the process until the water comes away clear. In case of poisoning from strong acids, when the lining of the stomach and mouth are corroded, this means cannot be used.

Common Poisons and Their Antidotes

Following are some of the more common poisons by which human life is endangered or destroyed, together with the antidotes which may be used in emergencies to procure relief or save life. In severe cases a doctor should be summoned without delay.

Name of Poison	Antidotes
ALCOHOL	Excite vomiting by large drafts of warm water; pour cold water on head and back of neck; keep up motion; whip the skin, palms of hands and soles of feet; use stomach pump.
ARSENIC	Ipecac; mustard tea; white of egg; milk; gruel; flaxseed tea; plenty of warm water; oil and lime water.
BELLADONNA	Vinegar and water freely; lime water; bitter infusions; stimulants; stomach pump; cold water poured on head.
BUG POISON	Whites of eggs or milk in large doses.
CARBOLIC ACID	Large doses of olive oil with a little castor oil; tablesp Epsom salts in water; boiled flour and water.
CHLOROFORM	Dash cold water on head and chest; artificial respiration; try to keep patient walking in fresh air; use no chemical antidote.
CORROSIVE SUBLIMATE	Whites of eggs abundantly; milk in quantity; boiled flour and water; boiled starch; excite vomiting by large drafts of warm water.
FUNGUS (FALSE MUSHROOMS)	Emetics; purgatives; acid drinks, stimulants; bitters.
HELLEBORE	Speedy vomiting by large drafts of warm water; molasses and water; oily drinks and purgatives; strong coffee; camphor in water.
LIME	Vinegar; lemon juice; vegetable acids; emetics; warm baths.

Name of Poison	Antidotes
MOUNTAIN LAUREL	Emetics and nauseating drinks; warm water; molasses and water; purgatives; stimulants; strong coffee; stomach pump.
NITER	Flaxseed tea; barley water; molasses and water; emetics; stimulants, etc.
OIL OF VITRIOL	Chalk or whiting mixed with water; ashes and water; soap and water; white of eggs; milk; oil; if possible use stomach pump with great care.
OXALIC ACID	Chalk or whiting made in a cream with water; lime water with oil; carbonate of magnesia; emetics; stomach pump.
OIL OF TAR	Induce vomiting by copious drafts of warm water or other emetics.
OPIUM	Excite quick vomiting by copious drafts of warm water, mustard water and other emetics, and use stomach pump. Administer stimulants, brandy, strong coffee and tea; pour cold water on head and back of neck, and whip the skin, the palms of the hands and soles of the feet.
PTOMAINE	Promptly administer emetic and quick purgatives, also heart stimulants, such as brandy. Milk and egg white act as neutralizers. Summon doctor.
PHOSPHORUS	Fill up the stomach with magnesia and water and give emetics and nauseating drinks; keep up the vomiting until the danger is passed.

Name of Poison	Antidotes
POTASH	Vinegar; lemon juice; tartaric acid in water; vegetable acids; emetics.
PRUSSIC ACID	Application of strong ammonia to nostrils; stimulants; liniments to chest; cold water poured on head and spine; give diluted solution of chloride of soda or lime.
POISON IVY	Bathe parts freely with spirits of niter; dissolve a handful of quicklime in water, let stand ½ hour and then paint the poisoned parts with it. Repeat applications 5 or 6 times. Bathe affected parts with olive oil and take internally 2 tablesp olive oil 3 times a day; lard mixed to a paste with prepared chalk, used as an ointment.
POISON DOGWOOD	Treatment is the same as for poison ivy.
PARIS GREEN	Milk; raw eggs; sweet oil; lime water; boiled flour and water; emetics; stomach pump.
STRYCHNINE	Mustard and water; sulphate of zinc; keep patient absolutely quiet and plug ears of patient. Send for doctor.
SUGAR OF LEAD	Epsom salts; milk; whites of eggs; boiled flour and water; emetics; stomach pump.
SULPHATE OF ZINC	Whites of eggs; boiled flour and water; large quantities of milk; infusions of tea or oak bark; emetics and purgatives.
TARTAR EMETIC	Warm drinks; strong, green tea; tea made of oak bark; emetics.

Name of Poison	Antidotes
GENERAL DIRECTIONS	For acid poisoning give alkali remedies and for alkali poisons give acid remedies. Large quantities of milk and raw eggs are generally safe. Salt water, soap water or mustard water, lukewarm, are effective emetics; sweet oil or olive oil, or boiled flour and water, boiled fluid starch, or flaxseed tea, are soothing drinks.

List of Medical Necessities

Those who live on farms or ranches, or in other places where medical help is difficult to get, would do well to procure the following list of medical necessities for the household. With all these on hand, one will possess a medicine chest capable of meeting all the likely emergencies of everyday life.

Graduated medicine spoon and medicine glass—Medicine dropper or drop bottle—Hot water bag—Enema syringe—Fever thermometer—Court plaster and surgeon's plaster—Caustic pencil—Absorbent borated cotton—Red cross bandages—Tincture of arnica—Spirits of ammonia—Spirits of camphor—Carbolic acid—Castor oil—French brandy or whisky—Ground ginger—Ground linseed—Ground mustard—Essence of ginger—Essence of peppermint—Bi-carbonate of soda—Chalk mixture—Vaseline—Paregoric—Tincture aconite—Sweet spirits of niter—Sal volatile—Witch-hazel—Quinine pills—Phenacetine—Boric acid—Charcoal—Cream of tartar—Epsom salts—Glycerin—Iodine—Lime water—Linseed and linseed meal—Licorice powders—Calcined magnesia—Chloride of potash—Sulphur—Turpentine.

Common Medicines and Their Uses

ALBUMEN—This is white of egg and is used, outside of its culinary functions, as an antidote to metallic poisons, with which it forms an insoluble compound. Should be given mixed with water.

ALCOHOL—This is a stimulant and should be given mixed with water. Brandy or whisky come under the same head. Give with caution.

ALUM—This is an astringent; used for gargles and injections. For external use only.

ANTIPYRINE—This is a febrifuge and lowers the pulse. Is given in case of fevers, feverish colds, influenza, headache etc. Dose, 3 to 5 grains.

ARROWROOT—This is a nutritive and forms a pleasant and wholesome food for invalids.

BROMIDE OF AMMONIUM—This is a nervine, very useful in sleeplessness, hysteria and neuralgia. Dose, 5 to 10 grains. Use with caution.

BORIC ACID—This is antiseptic, and as a 4% solution in water, it forms a very effectual lotion for the eyes. In powder it may be used for dusting purposes; mixed with vaseline it yields an excellent everyday ointment.

BORAX—This is astringent and combined with glycerin or honey is used largely for ulcers of the mouth. Its solution in water gives an excellent gargle.

CALOMEL—This is a purgative and is excellent in cases of bilious headaches. Is best if combined with other purgatives in the form of a pill. Use with care. Dose, ¼ grain to 2 grains.

CAMOMILE—This is the common camomile flower, a bitter tonic, very useful in disorders of the stomach and indigestion. Can be taken as an infusion or in pill form.

CAMPHOR—This is a stimulant and sedative. Ten drops on a lump of sugar will cure an incipient cold in the head. Camphorated oil is an excellent liniment to use in cases of cold.

CARBOLIC ACID—This is antiseptic. Use 1 teasp to 1 pt water to wash sores.

CASCARA SAGRADA—This is a laxative and beneficial in chronic constipation and dyspepsia. Dose of fluid extract, 8 to 10 drops after each meal, in water.

CASTOR OIL—This is cathartic and safe and effectual. Dose, 1 teasp to 2 tablesp.

CATECHU—This is astringent and useful in diarrhea. The dose is ½ to 1 teasp of the tincture, combined with 1 tablesp chalk mixture.

CHALK—This is astringent and anti-acid and is used as an antidote for poisoning by oxalic acid; also useful in diarrhea. Dose, 10 to 50 grains.

CHARCOAL—This is antiseptic and absorbent, given largely for dyspepsia attended with flatulence and acidity. Dose, 2 to 10 grains.

COD LIVER OIL—This is demulcent and nutrient; useful in colds and chest diseases. Dose, 1 teasp to 1 tablesp, 2 or 3 times a day.

COLLODION—This is emolient, and painted on a wound it forms a skin, protecting it from exposure.

CREAM OF TARTAR—This is diuretic and a pleasant spring medicine. Dose 1 teasp, in water, every morning, combined with the same quantity of Epsom salts.

CREOSOTE—This is astringent and antiseptic, but a poison,

and should be used with great care. Useful for toothache. To be given internally only, by doctor's prescription.

CORROSIVE SUBLIMATE—This is corrosive and antiseptic, and one of the most powerful remedies for destroying disease germs, but on account of its highly poisonous and corrosive nature, is highly dangerous to use.

DANDELION ROOT—This is an hepatic stimulant, useful in cases of sluggish liver. Dose of the fluid extract, 1 to 2 teasp, in water, 3 times a day.

DIALYZED IRON—This is a tonic and can be taken by those who cannot digest the acid preparation of iron. Dose, 10 drops in water after meals. It is also used as an antidote to arsenical poisoning.

EPSOM SALTS—This is cathartic and mild and safe; useful in cases of obstinate constipation. Dose, ½ oz to 1 oz in water.

GENTIAN—This is a bitter tonic, valuable in cases of debility of the digestive organs. Make an infusion and give small wineglassful as a dose.

GINGER—This is an aromatic stimulant, given in cases of dyspepsia and flatulence. Dose of essence, 10 to 20 drops in water.

GLYCERIN—This is emolient and prevents flatulence and acidity. Dose, 10 drops to 1 teasp in water. Used also externally for softening the skin.

GUM ARABIC—This is emolient and nutritive. A small piece allowed to dissolve in the mouth will relieve a cough.

HORSE-RADISH—This is a relish and a stimulant, and useful as a spring medicine.

IODINE—This is a resolvent and counter-irritant, used principally in the form of tincture or liniment, as an external application to reduce swellings, etc.

IODOFORM—This is antiseptic, and in powder or ointment forms a good application for ulcers, etc.

IPECAC—This is expectorant and emetic. In small doses it acts as an expectorant, relieving coughs, colds, etc., in large doses it forms a safe emetic, useful in cases of whooping cough, poison, etc. Dose as an emetic, 15 to 25 grains; in the syrup form as an expectorant, dose 5 to 35 drops; as an emetic, 3 to 5 teasp.

IRON—This is a tonic, and in its various forms is one of the best restoratives. Reduced iron, tincture of iron and dialyzed iron are the preparations most used.

LANOLIN—This is emolient and useful for skin diseases.

LEMON JUICE—This is citric acid and mixed with sugar and water forms a pleasant and refreshing drink for fever patients.

LIME—This, when slaked and strained, forms a good addition to infants' milk, when babies suffer from teething. When mixed with linseed oil, is a good application for burns.

LINSEED—This is a demulcent, and an infusion of the seed mixed with lemon juice is useful in colds. The clear infusion forms a good laxative.

LINSEED MEAL—This is also demulcent, and is useful as a poultice, either alone or in conjunction with mustard.

LICORICE POWDER—This is a laxative compound and a reliable remedy in cases of habitual constipation. Dose, 1 teasp at bedtime.

MAGNESIA—This, in calcined form, is a good laxative, useful in cases of dyspepsia, gout, sick headache and other complaints attended with acidity of the stomach and constipation. Dose, 1 teasp. In the citrate form it is also a useful and pleasant drink in hot weather.

MALT EXTRACT—This is restorative and a good strengthening medicine in cases of dyspepsia and pulmonary complaints.

MANNA—This is a laxative, pleasant to the taste and replaces castor oil for children. Dose, ½ to 2 drams in milk.

MILK SUGAR—This is recommended to replace ordinary sugar in infants' diet, as it does not ferment.

MUSTARD—This is a counter-irritant and emetic, useful in the form of a poultice for a cold in the chest, and in cases of poisoning, as a drink, to induce vomiting.

PEPPERMINT—This essence is an excellent remedy in cases of dyspepsia attended with flatulence. Dose, from 10 to 20 drops in water.

PEPSIN—This is a digestive, to be taken in the form of powder or elixir, after each meal. Dose, 5 grains of the powder or 1 teasp of the elixir.

POPPY CAPSULES—These are a sedative and form a good fomentation for gum boils and painful swellings. Should be used in conjunction with camomile flowers, the whole to be boiled with water for some time, and applied as hot as possible.

POTASH—The chloride of potash mixed with water makes a gargle in cases of sore throat and ulcerated mouth. A small lozenge held in the mouth is useful when it is not convenient to gargle. The citrate of potash is valuable in cases of gout and rheumatism, and in affections of the kidneys. It is slightly laxative. The permanganate of potash is a powerful antiseptic and in weak solution is much used as an injection. Is also a good general disinfectant.

QUININE—This is perhaps the most universally used and is generally a valuable drug. Its principal uses are for reducing fevers, for nervous affections, and especially as a general tonic, in the form of quinine wine. Dose, 2 to 6 grains.

RHUBARB—This is useful in disorders of the stomach, in combination with bicarbonate of soda. Dose, 1 to 15 grains.

SALT—This is an emetic always handy in case of poisoning. To be given freely in warm water.

SAL VOLATILE—This is a stimulant and also an antacid, very useful in cases of flatulence; also as a stimulant in cases of faintness, etc. Dose, 20 to 30 drops in water.

SENNA—This is a cathartic and a very well known and useful family remedy. To be given as in infusion or in the farm of a compound with figs, raisins, dates, etc.

SODA—The bicarbonate of soda is useful in cases of flatulence and sour stomach; also as a gargle for sore throat and ulcerated mouth. Dose for internal use, ⅛ to ¼ teasp in water; as a gargle, 1 teasp to 1 glass of water.

SULPHUR—This is a useful laxative in hemorrhoids, in the form of a compound powder; also used externally as a lotion or ointment for skin disease.

TURPENTINE—Applied externally, mixed with olive oil or camphorated oil, it makes a good liniment in cases of stiff joints, rheumatism, etc.

VALERIAN—This is a stimulant for nervous cases; useful in hysteria.

VASELINE—This is emolient and either compounded with other medicinal agents or alone forms an excellent application for wounds, etc.

ZINC OXIDE—This is astringent and absorbent, and used largely externally as a powder and ointment, for its healing properties.

Cough Syrups and Compounds

Flaxseed tea is soothing and good to loosen a cough. To 1 oz whole flaxseed add 2 tablesp sugar, 2 tablesp lemon juice and 2 sticks shredded licorice root. Over this mixture pour 2 qts boiling water and let stand about four hours on back of stove, then strain. May be given in frequent doses of 1 tablesp.—[J. S. A., Vt.

I have found an effective cough cure in a mixture made by boiling horse-radish roots in water, straining, adding sugar and boiling until it is a thick syrup. Take 1 teasp whenever necessary. This, of course, is only for unimportant colds, where it is not necessary to call a doctor.

Put 1 qt horehound in 1 qt water and boil it down to 1 pt; then add 2 or 3 sticks of licorice, and when this has dissolved, add 1 teasp essence of lemon. Bottle and cork. Dose 1 teasp 3 times a day, or at any time the cough may be particularly troublesome.

For the cure of coughs, colds, asthma and whooping cough, the following preparation is said to be good: To 1 tablesp common tar, add 3 tablesp honey, yolks of 3 eggs and ½ pt wine. Beat the tar, eggs and honey well together with a knife and bottle for use. Dose: About 1 teasp every morning, noon and night before eating.

Soak 1 cup flaxseed over night. In the morning put 2 qts water in a kettle, a handful split-up licorice root and ¼ lb good raisins, broken in half. Let boil until the strength is thoroughly extracted, then add the soaked flaxseed. Let all boil ½ hour more, stirring, that the mixture may not burn. Dose: One teasp, warm or cold, 5 or 6 times a day.

To 1½ pts water add 2 large poppy-heads and 2 large lemons, and boil till they are soft. Press the lemons into the water, strain the liquor and add ½ dram saffron and 1 lb brown sugar. Boil all together till the sugar is dissolved, then stir until it is about ready to jelly. Strain it a second time and it will then be ready to use.

A syrup for infants is made as follows: The ingredients are 1 lb best raisins, ½ oz anise seed and 2 sticks best, pure licorice. Split the raisins and extract the seeds, pound the anise seed and cut the licorice fine. Add to this mixture 3 qts strained, pure rain water, and boil it all down to 2 qts. Give a little dose 3 or 4 times a day. This syrup is harmless; the raisins are to strengthen, the anise seed is to expel the wind and the licorice acts as a mild physic.

Mix together 1 pt gin or whisky, ½ pt glycerin, ½ lb rock candy and 1 oz horehound, which is an herb and must be steeped before adding to the first named ingredients.—[Mrs R. W. H., Me.

Take 1 oz each spikenard, angelica, comfrey, horehound and campanula, well steeped and strained and make into a rich syrup with honey. The roots will cost about 25 cents and will make 1 qt of the liquid. Sugar may be used instead of honey. This will also relieve sufferers from asthma.—[Mrs M. A. J., Wis.

The ingredients of another very good cough syrup are: One lb tar, 2 lb white sugar, 1 lb strained honey, 1 lb horehound candy and 2 large sticks licorice. Pour the tar into 2 qts boiling water and boil 2 hours, then set away to get cold. (Add water as it boils away.) Strain the tar water and add the other ingredients to it, and boil to a good syrup. Dose: 1 teasp 3 or 4 times a day, or more if needed.—[Mrs T. V., Wis.

An attack of coughing can sometimes be allayed by taking a lump of sugar saturated with spirits of turpentine. A few drops paregoric, oil of tar, spirits of camphor or essence of peppermint on 1 teasp sugar is also effective in emergencies.—[J. C., Mass.

This is said to be a splendid remedy for coughs, especially where there is any soreness of the lungs: Put 2 tablesp flaxseed meal into 1 pt boiling water and cook five minutes, then add the juice of 1 lemon and 2 tablesp sugar. Dose: One teasp every hour, or if cough is very troublesome, dose can be doubled. This also acts as a laxative.—[Mrs W. L. S., O.

Here is an old-fashioned cough remedy: To 1 cup molasses add 2 tablesp dark brown sugar and ½ lemon, cut fine. Boil over a slow fire until it begins to thicken, then remove and add 1 tablesp glycerin and vinegar enough to give a sharp taste. Dose: One teasp whenever cough is troublesome.—[S. A. W., Ala.

Here is a fine pine cough remedy: Put about 3 qts fresh picked pine needles in an agate or earthenware kettle, cover with water and let soak over night. In the morning put over the fire, and when it comes to a boil push back where it will simmer slowly several hours. Strain and add 1 lb sugar and boil to a syrup, then strain again and add ½ pt gin, and bottle. Dose: One teasp every hour till relieved. Has cured many obstinate coughs, especially those left by grippe.—[Mrs W. C. D., N H.

An onion cough syrup is made of 6 large onions cooked in 1 qt vinegar until soft. Strain and squeeze out all the juice, add 3 lb sugar, and when cold add 2 oz tincture of lobelia. Very good for sore throat, and especially croup.—[Mrs W. C. D., N H.

Mix 2 oz glycerin, ½ oz concentrated oil of pine and ½ pt whisky. Shake before taking. Dose: One teasp to 1 tablesp every 3 or 4 hours. Be sure the ingredients are all pure and good.—[E. M. P., Mo.

Boil 2 oz flaxseed in 1 qt water, strain and add to the water ¼ lb sugar, 1 pt pure, strained honey, and the juice of 3 lemons. Take 1 tablesp as a dose as frequently as necessary. [E. B. D., O.

Take ½ lb dry horehound herbs, 3 tablesp flaxseed and 3 tablesp ginger. Boil all in 3 qts water, then strain and add 1 lb granulated sugar. Boil slowly, stirring often, until reduced to 1 qt of syrup. Take 1 or 2 teasp 5 times a day.—[Mrs M. W., Vt.

An excellent cough remedy is made of 1 cup strained honey, ½ cup olive oil and the juice of 1 lemon. Cook five minutes, then beat thoroughly for three minutes, so that the ingredients will mix. Take 1 teasp every 2 hours. This is very effective in case of severe cough or cold on the lungs. [Mrs H. R. W., Mich.

To make cough troches, mix together 1 oz each of powdered licorice root, powdered gum arabic, powdered cubebs and 1 lb pulverized sugar. Add enough water to make a stiff paste like bread dough; roll out thin, and cut troches with an open-top thimble. Arrange upon sheets of paper and set away to dry. These troches will be found excellent.—[Mrs F. A., Ore.

A pinch of a mixture of salt and sugar, taken now and then, will help to loosen an obstinate cough. Use 1 part salt to 2 parts sugar.—[A. G., Mass.

Whooping Cough Remedies

Mix ¼ lb ground elecampane root in ½ pt strained honey and ½ pt water. Put the ingredients in an earthen pot and place it in an oven with half the heat required to bake bread. Let it bake until about the consistency of strained honey. Administer in doses of 1 teasp before each meal to a child—if an adult, double the dose.

To 2 tablesp molasses add 4 teasp castor oil, 2 teasp camphor and 2 teasp paregoric. Dose: ½ teasp 3 or 4 times a day. This will be found to be of great service when children have symptoms of croup.

Unless there are complications, a tea or cough syrup made from chestnut leaves, and a laxative, are all that is necessary. Buy the leaves from a druggist, and follow directions on the package, for tea. If the syrup is preferred, add enough sugar to boil it down to proper consistency. Give as often as necessary. It is perfectly harmless, but needs a laxative occasionally.—[B. P. H., Okla.

Take 1 oz each of thoroughwort, horehound, flaxseed, wood licorice stick and slippery elm. Simmer all together in 1 qt water until the strength is entirely extracted, then strain carefully. Add 1 pt best molasses and ½ lb white sugar. Simmer all together until like syrup, then add juice of 2 lemons and bottle tightly. If kept in warm weather, a little spirit can be added. Cut or break the elm bark and licorice very fine. Dose: One tablesp 3 times a day.—[Mrs C. O. D., N H.

Into ½ pt vinegar break 1 egg, beat, and add ½ lb rock candy. Dose from 3 to 4 tablesp a day. Here is another remedy: Slice ½ pt each of onions and garlic and stew them in ½ pt sweet oil in a covered dish. When all juice is extracted, strain and add ½ pt honey and 1 oz each of spirits of camphor and paregoric. Bottle and cork. Dose: One teasp 3 or 4 times a day, or oftener.—[A. G., Mass.

Mix well together 1 tablesp tar, 3 tablesp honey, yolks of 3 fresh eggs, and ½ pt wine. Bottle. Dose: One teasp 3 times a day before meals.—[Mrs R. W. H., Me.

Take 1 tablesp castor oil and 2 of syrup and mix well. Give 1 teasp every hour.—[Mrs Mary J. L., Mich.

Use the white of an egg, beaten to a stiff froth and sweetened.—[B. E., Ore.

Croup Cures

Alum and sugar is an almost instantaneous remedy, if taken as soon as signs of croup appear. Use 1 part powdered alum to 2 parts sugar. Give 2 teasp as a dose.—[A. G., Mass.

Mix together 2 teasp powdered alum, 1 tablesp molasses and

1 cup hot water. Dose from 1 teasp to 1 tablesp every five minutes.—[Mrs H. W., Pa.

The juice of onions, sweetened with brown sugar, is an agreeable and effective croup remedy.—[Ella L., N. Y.

One teasp beat juice given every five minutes will help in cases of croup. So will white of egg with 1 teasp powdered alum stirred into it. Melted butter is another help, and lard and sugar mixed. If these remedies produce vomiting, so much the better.—[A. G., Mass.

A quick relief for croup is an onion poultice. Slice the onions thin, putting them in a stewpan with just enough water to keep from burning, and stir in a little corn meal. The onions may be used alone. Apply to throat and lungs, as warm as can be borne.—[Mrs C. B., N. H.

Rub chest and throat of croup patient with turpentine and cover with flannel moistened with the oil. Also inhale the vapor. The turpentine may burn the skin, but sweet oil will relieve the burn. A strip of flannel wrung out of very hot water and put around the neck will also afford relief.

Administer 1 teasp strong alum water and repeat dose every 15 minutes until free vomiting occurs. Put the legs in hot water and then wrap in flannel. Place on the chest a poultice of corn meal sprinkled with mustard. Beware of cold drafts. As the attacks depart give a dose of magnesia, castor oil, or rhubarb.—[Mrs C. H., Pa.

Mix equal parts of honey, linseed oil and Jamaica rum, and give 1 teasp as a dose three times a day, before meals, for child from 3 to 5 years—oftener, if the cough is very troublesome. Pure whisky or brandy can be used instead of the Jamacia rum, if the latter cannot be obtained. This is Dr. Knight's specific for whooping cough.

Sore Throat and Hoarseness

The white of an egg, thoroughly beaten and mixed with lemon juice and sugar, will relieve hoarseness. Take 1 teasp occasionally as a dose.—[A. G., Mass.

Place a piece of fresh rock-lime, size of an egg, in a quart bowl and pour 1 cup cold water over it. Have ready a funnel large enough to cover the bowl, and when the lime begins to slake, invert the funnel over the bowl and inhale the fumes of the lime as long as it steams, taking care to protect the eyes from the fumes. In addition to this treatment, take a small swallow of pure witch-hazel every hour, and the hoarseness will soon disappear.—[Mrs H. L., Va.

This is effective treatment in cases of quinsy sore throat or tonsilitis: Make a gargle of 1 teasp each salt, saleratus and borax, and 1 pt hot water. Warm the mixture each time and gargle 3 or 4 times a day. After gargling swab out the throat

with a cotton wool swab securely fastened to a holder and dipped in this mixture: 1 oz glycerin diluted with 1 oz extract of iron. The throat, from ear to ear, should be covered with a hot flaxseed meal or bread poultice, to be renewed every 1 or 2 hours.—[Mrs H. L., Va.

For sore throat, proceed as follows: Before retiring dip a folded white cloth in a cold salt water solution (use 4 tablesp salt to 1 pt water), bind it around the throat, with a dry cloth over it, and go to sleep, with the expectation that when you arise next morning, the soreness will be gone—unless it is an extraordinarily severe or chronic case.—[M. S., Tex.

Gargles for sore throat are made of borax, or soda, or salt, or alum, or peroxide of hydrogen—any of these mixed with water. A few drops tincture of myhrr or listerine may be added to the borax or soda solutions. Use gargle every hour faithfully until cured.—[A. G., Mass.

Mix 1 gill strong cider vinegar, 1 tablesp salt, 1 tablesp strained honey and a pod of red pepper together, boil a few minutes, then pour over it ½ pt of strong sage tea. Take 1 teasp as often as necessary. This has been used in our family for throat and nasal troubles with excellent results.—[Mrs E. A. R., Vt.

The sweetened juice of a baked lemon (use enough sugar to make it syrupy) will relieve sore throat and hoarseness. So will equal parts of glycerin and lemon juice mixed. Take a little as often as necessary, but not often enough to sicken the stomach.—[Mrs J. C., N. Y.

Miscellaneous Cold Cures

For cold in the chest, rub with a hot mixture of 2 tablesp melted lard and 1 teasp each of spirits of camphor, turpentine and kerosene. Cover with flannel. Do this morning and evening for three days. Use a weaker mixture for children.—[Mrs F. H., Md.

Here's a good cure for colds: Boil 2 oz flaxseed in 1 qt water, then strain and add 2 oz rock candy, ½ pt honey and juice of 3 lemons. Let boil well. Dose: One cup at bedtime and ½ cup between meals, taken hot.—[Mrs W. S., Wyo.

When baby's head is all stopped up with a cold, grease the bottoms of his feet, palms and nose thoroughly with pure lard, and see how quickly relief will follow.—[B. E., Ore.

Sudden, sharp, shooting pains in the side, if attended to at once, can frequently be banished by repeated applications of a mixture of 2 parts vaseline and 1 part English (ground) mustard. Spread on thickly and cover with a cloth.—[R. M. F., Me.

This onion gruel is excellent to check a cold: Slice a few onions and boil them in 1 pt new milk. Stir in a sprinkle of

oatmeal and a very little salt. Boil until the onions are tender, then sup rapidly and go to bed.—[Mrs. R. W. H., Me.

Drinking this mixture hot, before retiring, will often prevent a cold, after one has become thoroughly chilled: Slice up 1 lemon and remove seeds, add ½ cup sugar and 1 tablesp ginger, and pour over 1 pt boiling water. Let it steep a little and settle. Drink it as hot as you can, and get into bed immediately.—[Mrs W. H. L., Minn.

To break up an insipient cold in the head, smell strong ammonia every 5 or 10 minutes. Remember that a threatening cold can be warded off by getting the blood in rapid circulation.—[A. G., Mass.

Sweet, heavy cream is excellent to use in place of cod liver oil, and far pleasanter to take.—[B. E., Ore.

The powdered berries of the ripe, red, non-poisonous sumach, smoked as a cigaret, forcing the smoke out through the nostrils, will afford immense relief in cases of catarrh, and has even been known to effect cures before many ounces were used.—[P. J., Neb.

Rheumatism Remedies

There are many different kinds of rheumatism and hardly two people suffer exactly alike, but as a general rule, it may be said that rheumatism is primarily the result of wrong feeding, which affects the blood—rheumatism being a blood disease, due to the presence of uric acid, because the kidneys could not keep up with the excessive work piled onto them. Wet feet and exposure to cold are contributory causes. Every condition must be known before remedies can be prescribed. Consult a physician, but avoid "patent" medicines, which all too often only aggravate the matter. Regulate diet and bowels, eat fruit and vegetables, and drink plenty of pure water.

A remedy for rheumatism and stiff joints is made of 1 pt spirits of camphor, 1 pt coon, bear or skunk oil and 1 pt spirits of turpentine. Shake before using and apply 3 times daily. Rub vigorously for 20 to 30 minutes.

A German recipe for rheumatism calls for ½ oz each of oils of hemlock and cedar, 1 oz each of oils origanum and sassafras, 1 oz each of aqua ammonia and pulverized capsicum and ½ oz each spirits of turpentine and gum camphor. Put these ingredients in a qt bottle and fill it with pure alcohol.

A good liniment useful for rheumatic complaints is made of 2 oz each of olive oil, spirits of camphor and chloroform, and 1 teasp sassafras oil. First add the oil of sassafras to the olive oil, then the spirits of camphor, and shake well before putting in the chloroform. Keep well corked, as the chloroform evaporates easily. Shake well before using. Apply 3 or 4 times daily, rubbing it in well.

Some of the following remedies are said to be effective in cases of rheumatism: 1—Apply sweet oil to the affected parts, rubbing in vigorously before a hot fire, just before going to bed. The bowels should be kept regular. 2—Bathe the parts affected with water in which potatoes have been boiled, using the water just as hot as can be borne. Do this just before going to bed. 3—Bathe the parts affected with ½ oz pulverized saltpeter put in ½ pt sweet oil.

Rheumatism has sometimes been eased by a persistent use of lemon juice, either undiluted, or in the form of lemonade.

It is said that for inflammatory rheumatism in the joints, linseed meal poultices made with a strong decoction of valerian root are very effective. Poultices made of stewed pumpkin are also helpful.

A good liniment which I can recommend is made of ½ pt spirits of turpentine, 1 pt vinegar, 10 drops oil of sassafras and the yolk of 1 egg.—[G. O. S., Pa.

A rheumatism liniment in use in our family is made of 1 part olive or sweet oil to 2 parts spirits of camphor and ¼ part cayenne pepper. Shake well before using.—[A. S. B., Mass.

An excellent remedy for rheumatism is made of 1 oz each of turpentine and gum camphor, 2 oz hartshorn and ½ pt alcohol. Shake before using, and rub in well.—[Mrs M. A. J., Wis.

Here is a good rheumatism cure: Two oz English camomile flower, 2 oz celery seed, put in 2 qts water, and simmer down to 3 pts. Strain, bottle and keep in a cool place. Dose: One wineglassful before each meal.—[Mrs R. W. H., Me.

This simple rule, it is claimed, will cure rheumatic troubles: Dissolve ½ teasp bicarbonate of soda in ½ cup warm water. Take this dose three times a day, ½ hour before eating, for 3 consecutive days, then skip 3 days, then take it again for 3 days, and so on for 6 weeks or more, according to the severity of the case. The soda will neutralize the excess of acid in the system.—[E. A. M.

Goose oil mixed with a little wintergreen oil makes a good liniment for rheumatism. Salcylic acid is useful in cases of rheumatism, but should be taken only by doctor's prescription, as it can work great harm if taken in undue quantities when the system is not prepared to benefit by it.—[A. G., Mass.

Take equal parts of strong vinegar, sweet oil and turpentine, and put in a well-corked bottle. Bathe the parts affected with rheumatism with hot water, wipe dry and then apply this liniment, rubbing it in well. Do this every night until relieved. [Mrs R. D., Wis.

This is blood purifying and often will give relief in case of rheumatism: Mix together ¼ teasp red pepper, 1 teasp sul-

phur and 2 teasp molasses. Take this as a dose every morning for a week, then skip a week, then take it for another week, and you will experience great relief.—[M. M., Pa.

Poultices and Plasters

Flaxseed meal poultices are made as follows: Have 1 pt water boiling in a saucepan and stir in sufficient flaxseed meal to make it stiff enough so it will not run when spread—it will probably take nearly 2 cups of the meal. Boil a few minutes, then spread the desired size on a larger cotton cloth and fold over the four sides of the cloth, so none of the contents can leak out. Apply to the affected parts as hot as can be borne, covering with a flannel cloth. Have ready another hot poultice as soon as the first one has cooled, the contents of which can be heated over and used again.

Bread poultices, used for boils, felons, etc., are made by crumbling light bread, free from crusts, into boiling milk and cooking to the proper consistency. Add a small piece of lard, and apply hot in cloths, same as directed for flaxseed meal poultices. If it is desired to hasten the formation of pus, "to bring to a head," baking soda should be added. This makes it a little more painful, but disposes of the trouble more quickly. Bread soaked in vinegar makes a good poultice for sprains and bruises.

Mustard plasters will not blister if mixed with white of egg or part sweet oil. From ¼ to ½ part flour added to the ground English mustard makes a "slower" plaster, good to use for children. Use cold water and do not boil, but otherwise proceed the same as with flaxseed meal poultice, by spreading on cloth, etc. Mustard plasters need not be renewed, as a general rule. After removing a mustard plaster, rub sweet oil on the affected part, to soothe and allay possible itching.

Dry mustard plasters are made by spreading a thin solution of gum over clear and smooth white cloths, and sprinkling coarsely powdered black mustard seed evenly over them. Dry in a warm place. When wanted, they may be cut any size or shape. Before applying, quickly dip in tepid water.

A good plaster can be made of 2 oz beeswax and 6 oz each of tar and resin, melted together and spread on muslin.

This is an excellent poultice for cases where pneumonia is threatened: Peel and chop fine 6 or 8 onions, put in a saucepan over a hot fire, add about the same quantity of rye meal and enough vinegar to make a thick paste. Stir well and let simmer 8 to 10 minutes, then put in a cotton bag of suitable size and apply to patient's chest, as hot as can be borne. When it cools apply another and reheat the first by steaming. From 4 to 6 applications are usually enough to start profuse

perspiration. Another poultice, more quickly prepared, is made of lard and ground English mustard, spread on flannel and applied to chest and back.

An excellent plaster is made of 2 tablesp flaxseed meal and 2 teasp ground mustard. Mix with boiling water to proper consistency.—[Mrs. A. A. S., N. J.

This is a good stimulating spice plaster: Mix together 1 oz each of powdered cloves, ground cinnamon and ground allspice, 2 oz ground black pepper and 3 or 4 oz flour. Mix to a paste with a very little water and spread on muslin. If a more powerful plaster is required, substitute cayenne for black pepper.—[A. G., Mass.

If, when making mustard plasters, ground ginger and mustard are used in equal quantities, and diluted with about ¼ the quantity of flour, the plaster will not blister. The ginger is better for all colds of a grip nature. If mustard plasters are mixed with hot water, they act quicker.—[F. T., N. D.

For Headache and Neuralgic Pains

Mix together equal parts of opodeldoc, spirits of wine (refined alcohol) and sal ammoniac. Apply as any other lotion.—[Mrs J. C., N. Y.

Hop pillows are good for nervous patients and those afflicted with headaches and neuralgia. Heat them well and place under the head.—[E. L. M., N. Y.

A simple remedy for neuralgia is horse-radish. Grate and mix it in vinegar, the same as for table purposes, and use as a plaster.—[J. S. A., Vt.

Half cover a thin cloth with flour, then dust ginger liberally over the flour, fold the cloth over, thoroughly dampen with whisky, and pin on, with the ginger side next to the face. [W. H. H., Ariz.

Neuralgia is a nerve disease, and therefore quiet is necessary to the patient, to soothe the nerves. Hot applications will sometimes relieve or put the pain to rout. Drinking very hot milk with a pinch of salt in it will sometimes work wonders.—[M. E. S., N. Y.

Neuralgia of head and face may often be relieved by the application of a spice plaster of ginger, cinnamon, cloves, etc., instead of the usual mustard plaster.—[P. J., Neb.

A pinch of salt on the tongue, followed 10 minutes afterward by a drink of cold water, will often cure a sick headache. Other headaches will sometimes yield to a hot foot bath and hot water applications to back of neck.—[B. E., Ore.

For a sick headache, nothing is better than a cleaning out of the stomach. To do this quickly and easily, simply drink lukewarm water until you can't drink any more. Drink until you're "full to running over," and your stomach will empty

itself without any difficult retching. Follow the cleaning out with a small dose of bicarbonate of soda in water, and lie down to rest.—[M. A. M., Wis.

Remedies for Bowel Disorders

The following is said to be an excellent cure for diarrhea: To 2 oz laudanum add 2 oz each spirits of camphor, essence of peppermint and Hoffman's anodyne, and then add 2 drams tincture of cayenne pepper and 1 oz tincture of ginger. Mix all together. Dose: One teasp in a little water and ½ teasp an hour afterward in 1 tablesp brandy. This preparation, it is said, will check diarrhea in 10 minutes and abate other premonitory symptoms of cholera immediately. In cases of cholera, it has been used with great success to restore reaction, by outward application.

In cases of diarrhea it is important that the patient keep quiet. Bind a stout piece of flannel tightly around the abdomen, so as to be doubled in front, and lie down in bed. Eat nothing but parched rice, boiled and seasoned with salt. Drink no liquids.

To make blackberry cordial for diarrhea, mash ½ bu blackberries, boil slowly, and then strain through muslin or flannel. To the strained juice add ¼ lb allspice and 2 oz each of cinnamon and cloves. Bring to a slow boil, after which add for each pt of the juice 1 lb of sugar. Boil 10 or 15 minutes, then remove from fire, and while cooling, add ½ gal best French brandy.

Here is another blackberry cordial recipe: To 1 qt blackberry juice add 1 lb sugar, 1 tablesp each of cloves, allspice, cinnamon and nutmeg. Boil all together 15 minutes, then add a wineglass of whisky, brandy or rum. Bottle while hot, cork tight and seal. This is almost a specific in diarrhea. One dose, which is a wineglassful for an adult—half that quantity for a child—will often cure diarrhea. It can be taken 3 or 4 times a day, if the case is severe.

To make slippery elm bark tea, break the bark into bits, pour on boiling water, and let it draw like any ordinary tea, then strain and sweeten. This can be taken for bowel disorders, and in cases of cold can be used with the addition of lemon juice.—[E. M. T., Kan.

When there is urgent need for a diarrhea remedy, and the usual cures are not at hand, the following will help out in the emergency: Mix together 3 teasp salt, 4 teasp black pepper and ½ cup each of cider vinegar and warm water. For an adult dose, take 1 tablesp every 30 minutes, or more in severe cases.—[Mrs H. W., Pa.

When the baby is troubled with colic, rub the abdomen well with warm sweet oil, and it will cause relief almost at once.—[Bertha E., Ore.

A cure for mild cases of cholera infantum is to use the beaten white of egg with a little sugar added. Give 1 tablesp or more every hour.—[Mrs W. S., Wyo.

For sour stomach take ¼ teasp bicarbonate of soda in a little water and repeat dose in half hour. If accompanied by flatulence, add a few drops essence of peppermint. Use half doses for babies.

For stomach cramps and colic, usually caused by indigestion, administer a purgative injection, and apply warm plasters, bags, bottles or bricks to stomach, bowels and feet. Mix equal parts castor oil and spirits of turpentine, and take 1 or 2 tablesp of this mixture. In mild cases, 6 to 12 drops essence of peppermint in water will do.

Constipation of the bowels is a common complaint, but all so-called remedies only make a bad matter worse. To effect a real cure one must be patient and persistent. The first thing to be done is to establish the habit of attempting to evacuate the bowels at a particular hour of every day. Whether successful or not, the effort should on no account be omitted. Drink plenty of good water, eat liberally of fruit and vegetables, substitute brown and bran bread for white bread, and avoid puddings, cakes, pies, doughnuts, etc. In short, eat laxative foods and drink laxative liquids. Exercise between meals. Bathe frequently and use water injections. Be regular, systematic and sensible. You can effect a cure—so don't give up.

Obstinate cases of constipation have sometimes been cured with charcoal. Take 2 tablesp of the pulverized charcoal at a dose, and repeat every hour, until it has the desired effect, which ought to be in about 10 to 12 hours. It is a slow but sure cure and has the advantage of being perfectly harmless. A tablesp 2 or 3 times a day will promote regularity. In smaller doses it may be taken to correct bad breath and to prevent belching of wind from the stomach.

Scalds and Burns

If your clothing catches fire, DON'T run, but lie down and roll around, and scream at the top of your voice. The rolling will help to put out the flames, and by lying down you save your head from fire and the deadly inhaling of flames. The screaming will likely bring help. Roll yourself in a woolen blanket or rug, if you can, or when help arrives tell them to give you these articles, and to throw water over you. Above all, don't lose your head and you'll have some chance of saving your life.—[A. G., Mass.

A practical remedy to have on the medicine shelf is a bottle of collodion. When a burn or cut occurs, wash the wound quickly and pour on a drop or two of the collodion. The effect is instantaneous. An artificial skin is immediately formed over the hurt. The collodion is a strong disinfectant, so the sore heals rapidly and no further discomfort will be felt.—[J. A. W.

Molasses and flour is the best thing for burns or scalds, no matter how severe. As soon as possible pour the molasses over the burn, then cover thickly with flour and wrap cloth around. The molasses keeps the flour moist and prevents it from pulling the little hairs in the skin, and both together keep the air out. If this simple remedy would be used before the doctor gets there with his linseed oil and cotton, many valuable lives would be saved.—[Mrs A. T., Del.

Immediately make a paste of bicarbonate of soda and water and cover entirely the burned part. Tie up with a cloth and keep renewed until all soreness has disappeared, which will probably be, according to the burn, from 3 to 12 hours. This will not alone heal, but prevent any blister.—[Mrs L. C. P., Miss.

Add 2 teasp tincture of arnica to 1 pt sweet oil, for use in the case of scalds or burns. In either scalds or burns the first, best, and often the only remedies required are sheets of wadding or cotton wool; in default of these, toilet powder, flour, magnesia, chalk, pure lard, or oil should be used. These several articles will exclude the air from the injured part.

To make chalk ointment for scalds and burns, mix as much prepared chalk as you can into some pure lard, so as to form a thick ointment. To make lime and oil ointment, take equal parts of common linseed oil and lime water, and shake well. Soak lint with this, and apply to burns and scalds.

A poultice of tea leaves will afford almost immediate relief in cases of burns.—[Mrs F. L., Miss.

Make a paste of 1 cup lard and whites of two eggs, and apply to burns. When it dries, make a fresh application.—[Mrs A. A., Ga.

Pie crust, without salt, is one of the best applications for a burn. Roll thin, and apply to the entire surface of the burn, and leave till it drops off. No inflammation or scar will remain, but a second application may be necessary.—[B. E., Ore.

One teacup lard, whites of 2 eggs made into a paste and applied will certainly help a burn. Change as often as it gets dry.—[Mrs A. A., Ga.

Apply a poultice of tea leaves and an immediate relief is obtained.—[Mrs F. L., Miss.

A good remedy for a scald is a poultice of grated raw potatoes, bound on the burn. The poultice should be changed every hour until the burn heals.—[Q. McF., Ga.

The instant and free application of a mild, soft soap to a fresh burn almost immediately removes the fire from the flesh. If the pain is very severe, apply linseed oil, and then dust over with fine flour.—[M. A. P., Ill.

A glue mixture made of 1 lb white glue melted in 1 qt water, with 2 oz glycerin and 6 drams carbolic acid added, makes an excellent elastic covering for burns.—[Mrs W. H. L., Minn.

A mixture of linseed oil, whiting and cider vinegar to about the consistency of thick paint should be always kept on hand, in case of burns or scalds. It has been used in both hospital and private practice for over 40 years by a noted physician, who says no application can compare with it as regards relief of pain and curative results. Spread on linen and apply.—[R. M. F., Me.

For carbolic acid burns use alcohol. If you have no alcohol at hand, use brandy or whisky, or even beer, as each contain an amount of alcohol. It is wise to keep some alcohol on hand when using carbolic acid in case of burns.—[Mrs A. L. A., N. Y.

If you burn your hand, put it in cold milk immediately and keep it there about 10 minutes, then dredge with flour or starch. Burns can be greatly relieved by covering with wet cloths dipped in a solution of alum—4 oz to 1 qt water. Keep wet until healed. Powdered alum, fresh lard and white of egg, mixed, is also very soothing.—[A. G., Mass.

Cuts and Bruises

To stop the bleeding of a cut (unless a vein or artery was severed) use equal parts of arnica and warm water, or strong alum water—about 1 heaping teasp alum to 1 cup water.

When the blood from a cut is bright vermilion color and flows in spirts and jerks, an artery has been severed, and a physician should be summoned as hastily as possible. Meanwhile apply a ligature between the wound and the heart, a little way above the wound. (A ligature is a narrow bandage twisted very tight, to stop the flow of blood in veins and arteries.) If the wound is so located that a ligature cannot be applied, endeavor to stop the flow of blood by pressure of fingers, until surgical help arrives. Ice placed directly on the wound will sometimes coagulate the blood and reduce the flow.

Cuts should be cleaned of all foreign matter as quickly as possible. Use peroxide of hydrogen, arnica, turpentine, witch-hazel, alcohol, alum, or a solution of carbolic acid. Clean cuts heal quickly. Salt will stop the bleeding of small cuts and so will powdered resin. Bind with antiseptic cloths.

Oil of eucalyptus is one of the best antiseptic and healing drugs. If applied to a fresh cut it will seldom get sore, and will heal without pus.—[Mrs W. L. S., O.

A good antiseptic for bathing cuts and wounds is composed of 20 parts each of listerine and glycerin and 1 part carbolic acid. A solution of boracic acid is also good. Another healing lotion is made of 1 oz lanolin or unsalted suet, 20 grains camphor and ½ oz glycerin, melted together and then allowed to cool.

A bruise may be treated with either heat or cold. Apply flannels wrung out of boiling water or ice water, and continue applications for ½ hour. If this is done immediately, there will be no discoloration. Arnica or witch-hazel may be added to the cold water with good effect. Poultices of bread and vinegar are also good.

Salves and Liniments

A liniment good for wounds, stiff joints, rheumatism, etc, is arnica liniment, made as follows: Add 2 tablesp tincture of arnica to 1 pt sweet oil.

This is a good chilblain liniment: To 1 oz camphorated spirits of wine, add ½ oz of sub-acetate of lead (liquor). Mix well and apply 3 or 4 times a day.

A good camphor liniment is made as follows: Sixteen oz rectified spirits, 2 oz aqua ammonia, 2 oz camphor and 5 drops oil of lavender.

Here is a recipe for the old-fashioned Good Samaritan liniment: To 2 qts pure alcohol add 1 oz each oil of sassafras, hemlock, spirits of turpentine, tinctures of cayenne, catechu, guac and laudanum, 4 oz tincture of myrrh, 2 oz oil of origanum, 2 oz gum camphor, ½ oz oil of wintergreen and 1½ oz chloroform.

A good liniment, claimed to be very effective for rheumatism pains, is made of 2 oz each olive oil, spirits of camphor and chloroform, and 1 teasp oil of sassafras. Add the oil of sassafras to the olive oil, then the spirits of camphor, and shake well before putting in the chloroform. Keep well corked and shake before using. Apply 3 or 4 times a day, rubbing well.

A liniment for sore throat is made of 2 oz gum camphor, 1 dram castile soap, shaved fine, 1 tablesp oil of turpentine, ½ oz oil of origanum, ½ oz opium and 1 pt alcohol. Bottle and cork securely, and let stand a week or ten days. For external use only. Bathe the parts freely 2 or 3 times a day.

Here is a good liniment for those suffering with spinal trouble: Take a pint bottle and put into it 1 oz each of oil of origanum, wormwood, spirits of turpentine and gum camphor, and then fill the bottle with the best alcohol.

The old-fashioned brown salve is made as follows: Take 5 lb resin, ¼ lb each Burgundy pitch, beeswax and mutton tallow, 1 oz each oil of hemlock, balsam of fir, oil of origanum, oil of red cedar and venice turpentine, and ½ oz oil of worm-

wood. Melt the first-named ingredients together, then add the oils, stirring well, after which pour into cold water and work like wax until it is cool enough to roll.

The well-known balm of Gilead salve is made as follows: Take ½ lb mutton tallow, 2 oz balm of Gilead buds, 1 oz white pine gum, 1 oz red precipitate, 1 oz hard soap and 1 tablesp sugar. Stew the buds in the tallow until the strength is obtained, then strain. Scrape the soap and add it with the other ingredients to the tallow. Use sufficient sweet oil to make it the proper consistency to spread easily upon cloth. When nearly cool stir in the red precipitate, mixing thoroughly.

A good salve for felons is made as follows: Burn 1 tablesp copperas, then pulverize it and mix it with the yolk of an egg. This will cure a felon in 24 hours, after which apply a healing lotion.

This is a fine salve easily made at home: One lb each of bitter-sweet and sweet-elder roots, ¼ lb each of hop (vines and leaves), and garden plaintain (top and roots) and 2 oz of tobacco. Boil all in rain water, to get out the strength, then put the herbs in a thick cloth bag, press out the juice and boil down to ½ pt. Then add 1 lb unsalted lard or sweet oil and 1 oz each of beeswax and resin. Simmer over a slow fire until the water is all evaporated.

A salve which the Russians use for all kinds of wounds is made of equal parts yellow wax and sweet oil, slowly melted together, and a small quantity of glycerin stirred into it while cooling.

A black salve, said to be very healing, is made as follows: Melt together 3 qts olive oil and 3 oz each of common resin and beeswax, raise almost to the boiling point, then gradually add 2½ lb of pulverized red lead, if in summer; if in winter, use ¼ lb less of the red lead. In a short time the lead will be taken up by the oil, and the mixture will become brown or black. When it has reached this stage, remove from the fire, and when nearly cold add ½ oz pulverized camphor.

This liniment has the value of being harmless and easily made at home: Thoroughly beat 1 egg, then add 1 cup each of sharp vinegar and turpentine. Put in a bottle and shake well.—[Mrs R. D., Wis.

Here is a good salve for burns: Melt together beeswax and lard, each about the size of a walnut. While hot add 1 tablesp linseed oil.—[C. L. A., O.

This is a good salve for fresh wounds: Melt together 1 pt olive oil, ½ oz beeswax, and ½ oz resin. Then add 1 teasp lard and 1 oz powdered borax.—[E. B. D., O.

This recipe has been in our family over a hundred years. It can be applied to old sores and fresh wounds. To 3 lb lard add ½ lb resin and ¾ lb beeswax. Put the ingredients in an earthen dish over a good, hot fire and stir 3 hours, then

add 2 oz oil of spike and stir 1 hour longer.—[Mrs T. V., Wis.

This is called magnetic ointment, and is claimed to be good for man and beast: To 1 lb elder bark add 1 lb spikenard and 1 lb yellow-dock root. Boil these in 2 gals water down to 1 gal, then strain and press the strength out of the roots, and boil the liquid down to ½ gal, after which add 8 lb best resin, 1 lb beeswax, and tallow enough to soften. Work into small rolls and apply by warming and spreading on linen.—[Mrs M. A. J., Wis.

This ointment is excellent for piles, ulcers, burns and scalds: To 1 oz lard add 1 dram extract of stramonium.—[Mrs H. W., Pa.

This is a good lotion for tetter: To 1 qt pure cider vinegar add 1 oz blood root. Shake well and let it stand a few hours. Bathe the parts affected 2 or 3 times a day until cured.—[B. E., Ore.

Powdered slippery elm bark made into a poultice by mixing with either hot or cold water and laid right next to a wound will draw out inflammation and help the healing process at the same time.—[C. L. A., O.

A simple salve, very helpful for cases of erysipelas, is made of scraped carrot and unsalted butter stewed together.—[Mrs M. P., Ill.

This is fine for ringworm and scald head: Melt together equal parts of tar and mutton tallow, and stir well until cold. [Mrs H. W., Pa.

This is Dr Daniels' recipe for chloroform liniment: To 1 oz sweet oil add ½ oz oil of sassafras and 4 oz aqua ammonia. Shake well, and then add 1 oz laudanum, 2 oz tincture of arnica, and ½ oz chloroform. This is fine for rheumatism, sprains, etc. Rub in thoroughly. Shake well before using.—[Mrs M. A. J., Wis.

This is a fine household liniment: Mix equal parts sweet oil, spirits of camphor and turpentine. A little ammonia can be added, but that makes it rather strong.—[Mrs H. W., Pa.

This is a sort of cure-all liniment. It will give quick relief in cases of sort throat, cold on the chest, bruises, etc. Add to kerosene all the gum camphor it will dissolve, then add equal part sweet oil.—[Mrs T. V., Wis.

This is a good ointment for itching skin: To 3 oz fresh, unsalted butter add a lump of beeswax the size of a hickory nut, 5 tablesp ground juniper berries and 3 tablesp ground cloves. Melt and mix well and when nearly cool add 1 tablesp sulphur.—[Mrs G. O. S., Pa.

This is an ointment for eczema, open sores, etc., and, it is said, will also heal mange on dogs and skin sores on other animals: To 1 tablesp pure witch hazel add 1 tablesp glycerin and 2 tablesp oxide of zinc. Mix to a cream.—[Mrs H. L., Va.

Camphor liniment is made as follows: To 16 oz best alcohol

(rectified spirits), add 2½ oz aqua ammonia, 2 oz spirits of camphor and 6 drops oil of lavender. Another way is to mix together camphorated oil and spirits of turpentine, of each 2 parts, 1 part water of hartshorn and 1 part laudanum. Shake well.

Here is another camphor liniment: To 2 oz spirits of camphor add 1 oz spirits of turpentine, ½ oz laudanum, ½ oz castile soap, finely powdered and 3 oz alcohol. Put in a bottle and let remain three days in a warm place, shaking frequently. This liniment should be gently warmed before using. Valuable in cases of whooping cough and bronchitic affections. May be advantageously rubbed in on the chest and along the spine.

Camphorated oil is made as follows: Put 2 oz gum camphor in 1 pt of olive oil, cork the bottle and expose the materials to a moderate heat by placing the bottle in warm water. As an external stimulant application it is more powerful than the spirits of camphor. To obtain its full value, the parts treated should be covered with flannel and oil silk. This camphorated oil is a valuable liniment in cases of rheumatism and other painful affections, like sore throat and inflamed bowels.

Spirits of camphor may easily be made at home, for camphor may be dissolved without limit in alcohol. A good proportion for family use is 2 oz of gum camphor to 1 pt of alcohol.

This is a good itch ointment: To 1 lb of clear melted suet add 1 lb olive oil. When melted, strain and add 3 oz each of alum, niter and sulphate of zinc. Mix until the powders are well incorporated with the oil.

This is a fine cooling and healing salve: Take 3 lb of fresh elder leaves and bruise them, 4 lb of beef suet and 2 lb of lard. Boil all together until the leaves become crisp, and then squeeze through a linen cloth. Elder flower ointment is made the same way, using 1 lb of flowers and 1 lb of lard.

This liniment will relieve rheumatism: To 1 gill alcohol add 1 beef's gall, 1 gill spirits of turpentine, 1 gill sweet oil and 4 oz camphor gum. Put all in a bottle and shake well. Use 2 or 3 times a day, rubbing in about 1 teasp of the liniment at a time. This is also good for frost bites.

Stings and Bites

For a bee sting, place a lump of soda on the wound, drop some vinegar on the soda, let it bubble a minute, and then bind up the wound with soda. There will be no swelling.—[No Name.

For any kind of sting or bite of insects, apply dampened salt and bind tightly over the spot. It will relieve instantly and usually cures very quickly.—[Mrs H. L., Neb.

For stings of insects, to relieve immediately, when far from usual remedies, clap a handful of damp dirt or moist clay on the wound, removing when dry and heated and replacing with a fresh application.—[E. P., Mass.

For wasp or bee sting apply honey. For the stings of "chiggers" use butter thickened with salt.—[P. J., Neb.

An old-fashioned remedy for the sting of a bee or other insect is the juice of a raw onion applied immediately. If the sting remains in the wound, it should be extracted and the puncture dressed with a little weak ammonia.

Simple remedies for bee and insect stings are a piece of raw beef, a strong solution of ammonia, vinegar and salt, or borax moistened with lemon juice, or tincture of myhrr. Nettle sting may be cured by rubbing the part with rosemary, mint, sage leaves or dock leaves.

The most effectual remedy for the bite of the harvest bug is benzine. A minute drop of tincture of iodine is another cure. The attack of these insects may be prevented by sprinkling a little benzine over the stocking.

The bites of bees, wasps, hornets, scorpions, etc., may be instantly relieved by the immediate and free application of spirits of hartshorn (ammonia). The part may afterward be covered with a little sweet oil. To relieve the itching of mosquito bites apply at once a few drops of aqua ammonia or an infusion of tobacco. Carbolic acid, very much diluted, may also be used.

In the case of a bite from a rabid dog or venomous snake, the first thing to do is to stop the circulation of the poison by binding a handkerchief, towel or rope around the limb, between the wound and the heart, and then, if you have no sores on your mouth or lips, suck the wound and spit out the blood that comes from it, and bathe it with warm water to make it bleed. The wound should be made larger with a clean, sharp knife, so as to cause the blood to flow freely. If any of the following remedies are available, use them with discretion: Press a hot iron or live coal into the wound to cauterize it, or a drop of pure carbolic acid may be applied to the wound, or a strong solution of permanganate of potash, or strong spirits of ammonia, or full strength peroxide of hydrogen poured into the wound.

Bites of dogs should in every instance be first of all thoroughly cleansed with warm water, which encourages the bleeding of the wound, and afterward the raw surface should be cauterized either by lunar caustic or carbolic acid, then dressed with carbolized oil or carbolized zinc ointment.

Hives, Prickly Heat and Eczema

Hives are itchy eruptions, due to impure and overheated

blood, and also to indigestion. External applications afford only temporary relief. It is necessary to take a cooling and blood purifying medicine to effect a cure. As an external application use 1 teasp carbolic acid to 1 pt sweet oil. Apply every 1 or 2 hours first day, and 3 or 4 times a day thereafter. When retiring take 1 teasp Epsom salts. This treatment persisted in for three days will usually effect a cure.

Bathe hives with a strong solution of baking soda or with strong vinegar. Slightly diluted ammonia will relieve the intense itching. The same is true of alcohol, which may be used pure.

Prickly heat is a very common affection in infants. This condition is aggravated by perspiration. It is seen chiefly in hot weather and especially on children who are too warmly clothed. Treatment consists chiefly in avoiding or removing the cause. The irritated skin may be dusted with a camphor-zinc powder, made of 1 dram camphor, ½ oz oxide of zinc, and ½ oz starch, all three finely powdered. Keep the child on a light diet and give it a dose of magnesia. Itching may be relieved by a solution of 1 teasp baking soda in 1 pt water, dabbed on and allowed to dry.

This makes a soothing wash for prickly heat: Mix ½ pt wheat bran in 1 pt water, then let it stand and use the clear water for baths.—[E. K., Mass.

Eczema is a troublesome disease, particularly prominent in infants. Some of the principal causes are inherited tendency, debility of constitution, imperfect hygiene, improper diet, overfeeding, digestive disturbances, irritating soap, and the contact of soiled diapers. Owing to the disposition of the rash to spread, every case should early be put under a physician's care. The treatment open to the mother is to relieve the cause. Besides this she may give a laxative. The skin, if red and weeping, may be dusted frequently with a drying powder made of ½ oz each oxide of zinc and subnitrate of bismuth. Surfaces which touch each other should be separated by placing between them a thin layer of absorbent cotton dusted with the powder. To remove crust, soak thoroughly with sweet oil and proceed very carefully and gently.

Sumac and Ivy Poisoning

Ivy poisoning, if taken in the beginning and treated with applications of bicarbonate of soda, can generally be checked. Plain vaseline is soothing.—[F. D., N D.

Bathe the parts affected by ivy poisoning 2 or 3 times a day with sweet spirits of niter.—[C. L. A., O.

Heavily salted milk applied to the parts affected by ivy poisoning and allowed to dry on, is said to be a very effective remedy for ivy poisoning.—[Mrs M. A. J., Wis.

For ivy poisoning in its early stages, powdered chalk wet to a paste with water and applied thickly will give swift relief and prevent further inflammation.—[E. K., Mass.

A standard antidote for poisoning of wood ivy, sumac, etc., is to take a handful of quicklime, dissolve it in water, let it stand ½ hour, and then paint the poisoned parts with it. Three or four applications, it is said, will cure nearly every case.

A simple but efficacious remedy for ivy poisoning is a mixture of lime water in sweet oil, applied frequently.—[C. L. A., O.

I have seen many remedies prescribed for sumac poisoning, some of them (like sugar of lead) unsafe to use except by advice of a physician. My boy was so badly poisoned by sumac as to be unable to see out of his eyes, on account of the swelling of his face. A neighbor recommended a tea made from new corn cobs. The cobs were broken up in small pieces and boiled in a porcelain-lined kettle until the water was a deep golden color. Into this we dipped clean towels and wrung them out as hot as possible and laid them over the face of the little sufferer, changing them as soon as they cooled. I kept this up about six hours, and by that time he could open his eyes and was able to laugh. The swelling disappeared entirely and left no scars. This is a safe remedy that anyone who can obtain fresh corn cobs can prepare.—[Farmer's Wife.

Worms and Ringworms

Worms are very prevalent among children. They are more annoying than dangerous, though they sometimes give rise to serious complications, such as convulsions. Delicate and weakly children, especially those of a scrofulus habit, are more liable to worms than strong children. These parasites are always introduced into the body either by means of food or water. The treatment of worms which invest the lower bowel is best carried out by means of injections combined with bitters containing calomel. A scant tablesp of common salt dissolved in 1 cup of an infusion of quassia is very efficacious in dislodging these parasites. The food of the child should be well cooked and eaten with plenty of salt. Give 15 drops of tincture of iron in water three times a day after meals.

For roundworms the best remedy is santonine, in doses from 1 to 2 grains. Give at bedtime (the child having no supper that night), followed by a dose of castor oil in the morning before breakfast. This may be repeated every third night, three times.

Tapeworms are sometimes very difficult to remove, from the fact that the head is not easily dislodged, and if every vestige of the worm is not gotten rid of, it will grow again. One of the most popular remedies is oil of male-fern. Give 10 to 30

drops in milk, the patient having fasted some hours, and follow with a dose of castor oil at bedtime. The next morning give another dose of male-fern, and in 4 or 5 hours follow with another dose of castor oil.

When worms have been gotten rid of, it is always wise to give the patient a tonic of tincture of iron and infusion of quassia, for a few weeks afterward. Eat no meat.

Mix ½ oz oil of turpentine with the yolk of 1 egg and then add ½ pt of thin gruel. Use as an enema for worms.

A tea made of the bark of the American poplar is very useful in cases of debility, feeble digestion and worms. When children are troubled with worms, give them the following: One-half oz each spirits of turpentine, oil of anise seed, and castor oil, and 1 oz wormseed. The dose for a child one or two years old is 10 to 20 drops every 2 or 3 hours. In three days a brisk physic should be given.

Here are some worm cures: Finely powdered sage mixed with honey, 1 teasp for a dose. Give sweetened milk with the addition of a little alum. Flour and sulphur mixed with honey is very good.

Worms, and even tapeworms, it is said, can be gotten rid of by eating a large plateful of grated carrots mixed with syrup, for supper. Next morning take a large dose of castor oil. Repeat if necessary.—[E. M. T., Kan.

The seeds of the pumpkin afford a well-recognized remedy for worms. The oil of the seeds operates as a speedy diuretic in doses from 6 to 10 drops, 4 or 5 times a day. A tea of the seeds may be drunk freely at intervals of 2 or 3 hours. Another way is to peel the pumpkin seeds and make into a paste with sugar. Dilute this with milk and drink freely, always on an empty stomach. In the course of a few hours take an active cathartic. One tablesp of turpentine and the same quantity of castor oil is good. Druggists now furnish a fluid extract of pumpkin seeds for the destruction of the tapeworm.—[Mrs J. B., Kan.

For worms in children, steep very strong the bark of spotted alder or witch-hazel. For a year-old child give 1 tablesp. Increase the dose according to age. Give 4 or 5 times a day, for several days. To prevent worms, let children eat onions, raw or cooked—raw are the best.

To cure a ringworm, paint with equal parts tincture of iodine and olive oil, night and morning, being careful to cover the outer edges of the ring, to prevent its spreading.—[Mrs W. M. G., N. J.

Ringworm is contagious, but easily cured. Dissolve common black gunpowder in strong vinegar, and thoroughly saturate the ringworm twice a day.—[Mrs T. V., Wis.

To cure ringworm, take yellow dock root, wash and cut in small pieces, simmer in vinegar, and when the strength is

extracted, strain and apply the vinegar to the parts affected three times a day.

Minor Eye Troubles

To cure a sty on the eye put 1 teasp saleratus on a 3-inch square piece of muslin, fold so that the soda cannot fall out, and before going to sleep dip this muslin in water, lay it on the eye and fasten in place by means of a thin cheesecloth bandage. This will drive away unripe sties before morning. If the sty has come to a head, break open with a needle sterilized in a flame, and bathe the eye in warm bicarbonate of soda water, which may be followed by the application of a little vaseline. [Mrs H. L., Va.

This is a good wash for tired and weak eyes: To 1 teasp borax add 30 drops spirits of camphor and 1 pt hot water. Put in a clean bottle and cork.—[Mrs A. S. A., N. Y.

To relieve inflamed eyes, bathe them frequently with a solution of 1 level teasp borax and 1 cup cold water.—[C. L. A., O.

For sore and inflamed eyes there is nothing better than a poultice of cold tea grounds. Renew it when it gets warm and dry.—[Mrs F. M. G., Me.

When the eyes are tired, bathe with soft water, or slightly diluted witch-hazel will generally afford relief.—[A. G., Mass.

Immediately after the eye has been struck with force enough to make it black, apply a cloth wet with water, just as hot as can be borne. Keep this up for 20 minutes. This treatment will prevent discoloration.

To extract any foreign substance from the eye, fill a saucer overflowing full with warm water, bring to a level with the eye, and raise and lower the eyelid several times, so as to let the water enter the eye and wash it out.—[A. G., Mass.

This is a cure for sore and inflamed eyes: Pare and quarter a potato, wash, dry and grate as fine as possible. Place between pieces of cambric and put the poultice over the inflamed eye, keeping it there about 15 minutes. Continue the operation three successive nights.

A good eye wash is made of equal parts rose water and witch-hazel. Apply to the eyes as often as necessary. If you should happen to get some lime in your eyes, syringe them well with 1 part vinegar and 8 parts water. When the lime has been thoroughly washed out, use a little olive oil, and give the eyes a rest, excluding the light.

Minor Ear Troubles

Earache should be looked after immediately. Very serious results may follow a neglected earache. If the cause of the

earache is not known, consult a physician without delay. When an earache is simply the result of a common "cold," some of the following old-fashioned remedies may be of help:

Heat is generally the best remedy for earache. Apply a warm poultice or rub in back of the ear with warm oil. In case of a discharge, syringe the ear with warm water, and consult a physician.

To cure earache induced by neuralgia, insert cotton plugs dipped in a warm mixture of glycerin and witch-hazel, or glycerin and rose water.—[Mrs H. L., Va.

Neuralgic earache may be relieved by rubbing around and back of the ear with equal parts of turpentine and lard.—[B. E., Ore.

Thoroughly heat a large onion in the oven, wrap a piece of flannel cloth around it, and apply to the ear affected by earache. When it cools renew the application, and keep this up until the pain has gone. The heat will probably melt the hardened ear wax, which must afterward be removed with great care. Protect the ears from further cold by plugging with a little cotton batting.—[E. E. K., Mass.

Dr Hutchinson, of London, Eng, says that the safest and most effective way of removing foreign substances from the ear is to make 6 inches of very fine and flexible wire into a loop. Carefully pass it down to the tympanum and turn it gently around. Dr Hutchinson thinks this method far preferable to syringing.

To remove an insect from the ear, pour lukewarm water in the ear, hold the head to one side for a moment, then turn the head; the water will run out, carrying with it the insect.—[C. S., Okla.

Felons and Boils

As soon as a felon is noticed apply the following remedy: Mix to the consistency of putty equal quantities of soft soap and quicklime, make into little flat balls, and as often as one dries apply another. They will need to be changed about every half hour and are likely to cause pain, but in 3 or 4 hours they will have done their work, and the felon will be all drawn out, leaving a little hole, which will soon heal up, needing only to be washed daily with pure soap and warm water and covered with a light bandage to keep clean. Another remedy is to apply a poultice of onions, morning, noon and night, for 3 or 4 days.—[A. G., Mass.

Here is a simple felon cure: Insert the finger or thumb into a lemon and keep it there 12 to 24 hours. This will relieve the pain, and cure, if taken in time. Another cure is common rock salt mixed with spirits of turpentine, in equal parts. When it dries put on more. In about 24 hours the felon will be cured.—[Mrs J. C., N. Y.

When you fear a felon is coming, put 1 pt boiling water on the back of the stove, add 1 teasp saleratus and 1 wineglass vinegar. Hold your finger in this as hot as can be borne. Reheat and repeat about every half hour, till all the matter has been drawn to one place, then open the felon with a sterilized, sharp knife, remove the foreign matter and clean and bandage.

When I notice I have a felon coming, I bind up the finger in cloth and keep it wet with oil of spike, until all soreness is gone.—[Mrs M. W., Ida.

The habitual sufferer with boils needs a constitutional treatment, as generally there is some lack in the blood which must be supplied. It will be necessary to have a physician prescribe in that case. A boil should always run its course and should not be disturbed, except to apply a flaxseed poultice when painful. An incipient boil may be stopped by touching it with lunar caustic. It is well to poultice a boil 2 or 3 days after it opens, and after that apply a stimulating salve.

At the very first indication of a boil, touch it with pure carbolic acid, being careful not to allow the acid to touch the surrounding surface. By this treatment the boil will be aborted.

Melt some shoemaker's black wax, shape into a small, flat plaster, and press gently but firmly over the boil. This treatment will draw out all the pus and inflammation and leaves no scar.—[C. L. A., O.

Thin slices of salt pork put between clean, white cloths are good for boils. Change 2 or 3 times a day, until the boil has been drawn to a head.—[M. J. D., Mich.

To cure gum boils, wash them out with warm water, adding ½ teasp tincture of myrrh and a pinch of saleratus to each cup of water.—[Mrs H. L., Va.

Warts and Proudflesh

Milkweed is a cure for warts. Break a full-grown stalk and let the fresh juice fall on the wart and let dry on. Repeat application frequently until warts are gone.—[E. P., Mass.

Warts may be frequently washed with a strong decoction of oak bark and will generally disappear under this treatment. Another way is to wet a stick of lunar caustic and rub it on the warts a few times.

A solution of vinegar and baking soda will cure warts. If the wart is kept moist with it for 10 minutes 3 or 4 times a day, they will disappear in the course of a week or so.—[Mrs J. S. A., Vt.

Take a thin straw or slightly pointed headless match, dip in nitric acid, and apply to warts once a day, being careful not to let any of the acid touch the surrounding surface.

Under this treatment the warts will disappear in a week or 10 days.—[Mrs F. L., Miss.

Rub wart with a slice of raw potato once or twice a day for a few days, and the wart will gradually disappear, without causing soreness, discoloring the skin, or leaving a scar.—[Mrs L. E. H., Kan.

Carefully remove the rough outer surface of the wart and apply oil of thuja once or twice a day. This treatment will not cause pain or leave a scar. The warts will gradually dry up and disappear in about two weeks.—[N. S. B., Ore.

To remove proudflesh burn a piece of alum, powder it, and apply directly to the affected spot. Repeat every day if necessary, till clear.—[Mrs H. W., Pa.

Indigestion Cures

Never eat when very tired, angry or excited. Don't overeat nor take many condiments with your food. Eat slowly. Chew well. Don't wash down your food with water. Avoid any food that has a tendency to disagree with you.

I have cured myself of spells of indigestion by adhering to a strictly fruit diet for 2 or 3 days. Eat nothing but fruit during that time. Dyspepsia, heartburn and indigestion are often relieved by a cup of hot water in which a small teasp salt has been dissolved.—[B. E., Ore.

If troubled with indigestion and constipation, eat 2 or 3 tablesp bran moistened with a little milk and seasoned with salt and sugar, after each meal. A tablesp of pure olive oil taken 3 times a day will cure indigestion, banish sick headaches and put flesh on a slim person.—[B. E., Ore.

When you have partaken of anything which does not seem to digest well, you may obtain relief by drinking a glass of water to which has been added ½ teasp bicarbonate of soda and 10 to 12 drops essence of peppermint.—[Mrs M. J. L., Mich.

This is good to relieve indigestion and constipation: To ½ lb each of figs and raisins add ½ lb sugar and ½ pt boiling water. Tie up ½ oz senna leaves in a small cheesecloth bag, put this in the above mixture, and let the whole simmer slowly 20 minutes. Then pour out on oiled paper to cool. Eat about an inch square piece of this at bedtime.—[E. M. T., Kan.

Cures for Insomnia

To induce sleep at night, try a glass of hot milk just before going to bed. A warm bath sometimes brings sleep to sufferers of insomnia.—[E. E. K., Mass.

A good cure for sleeplessness caused by derangement of the nervous system is a dish of baked onions.—[Mrs M. H., Wis.

If you cannot sleep, though you are not ill, try eating a

thin slice of bread and butter, sprinkled with a little cayenne pepper. This is sure to induce sleep, but do not try the remedy too often, for the pepper would soon injure the stomach if too frequently used.

A remedy for sleeplessness, which many people never think of trying, probably because it is so cheap and easily obtained, is plenty of fresh air in the bedroom.—[A. G., Mass.

Some people find hop or pine needle pillows a help toward inducing sleep. Keep the feet warm and the head cool.

Cures for Drunkenness

The following is a tonic used by reformed drunkards to restore the vigor of the stomach: To ½ oz gentian root, add 1 dram valerian root, 2 drams rhubarb root, 3 drams bitter orange peel, ½ oz cardamon seeds and 1 dram cinnamon bark. Having bruised all the above together in a mortar (druggist will do it, if requested), pour upon it 1½ pts boiling water. Cover up close, let it stand till cold, then strain, bottle and cork securely. Keep in a dark place. About 2 tablesp may be taken every hour before meals, and half that quantity whenever the patient feels the distressing sickness and prostration so generally present for some time after alcoholic stimulants have been abandoned.

Following is another cure for drunkenness: To 10 grains sulphate of iron add 20 grains magnesia, 20 drams peppermint water and 2 drams spirits of nutmeg. Dose: 1 tablesp in water 2 or 3 times a day. This preparation acts as a tonic and stimulant, and so partially supplies the place of the accustomed liquor, and prevents that absolute physical and moral prostration that follows a sudden breaking off from the use of stimulating drinks. Take above tonics only as long as is absolutely necessary. Eat well-cooked food and masticate thoroughly. Be resolutely cheerful and keep in open air as much as possible. Pray without ceasing.

Tonics and Blood Purifiers, Etc.

This is a liver tonic: To 1 pt hot water add the juice of 1 lemon and ½ teasp salt. Sip this ½ hour before breakfast every morning for 2 weeks, then skip 2 weeks. This is especially beneficial if taken during the months of March and April.—[Mrs M. J. L., Mich.

This is a good spring medicine: Mix together ½ oz each of dandelion root, gentian root, prickly ash bark, red clover flowers, hops and Jacob's Ladder. This will make 1 qt. Steep it in 1½ qts water for 3 minutes, then strain, and when cold add ½ pt molasses. Keep in a cool place. Dose, ½ wineglass 3 times a day.—[Mrs C. O. Dias, N. H.

Sassafras tea, drunk freely in the spring, is a great blood purifier. It may be drunk hot or cold, and sweetened to taste. Some prefer a slice of lemon added to it. It is a very refreshing and palatable drink.—[Mrs F. B. H., Okla.

Purchase from the druggist about 5c worth each of sassafras, sarsaparilla, yellow dock, burdock root and dandelion root. Mix well together and put about 1 generous handful of this mixture into 1 qt water and boil 2 hours. Dose, 1 small wineglassful 3 times a day. This is an excellent blood purifying medicine.—[Mrs A. A. S., N. Y.

An old-fashioned and reliable spring purifying tonic is made by mixing together, ½ and ½, powdered sulphur and syrup or molasses. Dose, 1 teasp every morning before breakfast for 1 week. When taking this tonic guard against catching cold, as this treatment will open the pores of the skin.—[F. E. F., O.

Dandelion root as medicine: The best way of preparing it is to gather the roots in August and September. Evaporate by exposing to dry warm air. A decoction of dandelion will correct an unhealthy state of the stomach and liver. It is diuretic and very beneficial in jaundice.

Tea made from dandelion root is a good liver medicine, as is also the dried powdered inner bark of the barberry. The dose is as much as can be put upon a dime taken 3 times a day.—[Mrs F. B. H., Okla.

Boil 1 lb wild cherry bark in 1 qt water till reduced to 1 pt. Sweeten and add a little rum to preserve, or, if to be used immediately, omit the rum. Dose, 1 small wineglassful 3 times a day, on an empty stomach. This is good for yellow jaundice. Give half doses to children.

For the Little Ones

To make lime water, take a piece of unslaked lime the size of an egg and pour over it 1 qt pure water. Let stand a few hours, then filter through a clean, white cloth. Put it in a clean bottle and cork. Keep in a cool place. If the baby needs lime, put 1 teasp of this lime water in 1 cup milk.—[Mrs A. S. A., N. Y.

To cure baby's sore mouth and tongue, wash the mouth after each feeding with a soft, clean, white rag dipped in a solution of borax and warm water.—[Mrs H. L., Va.

When a child chokes on a bone or other object that it has tried to swallow, promptly turn the youngster upside down and hold it by the feet. In most cases the troublesome object will be quickly ejected.—[E. E. K., Mass.

To give children castor oil, warm the spoon by dipping in hot water. The oil will then slip easily off the spoon and be swallowed before the patient realizes it. A few drops of lemon or orange juice over the castor oil will make the taking of it

more agreeable. Give a pinch of salt or a little chocolate or peppermint candy after the oil has been taken.

Parched corn is an excellent remedy for dysentery, diarrhea and bowel complaints in children. Parch some corn, then grind fine in a coffee grinder. Boil in sweetened and salted milk and feed to the patient. It is a palatable and healthful food and generally relished by the children. Let them eat as much of it as they please.—[B. E., Ore.

If your children are thin and scrawny and take cold easily, give them from a teasp to a tablesp pure olive oil after each meal. Give them a pinch of salt as soon as they have swallowed the olive oil, and no taste of the oil will remain in the mouth.

When a child comes running to you with a splinter in its hand, you can extract it easily by steam. Nearly fill a wide-mouthed bottle with hot water, place the injured part over the mouth of the bottle and press tightly. The suction will draw the flesh down and in a minute or two the steam will extricate the splinter.—[F. T., N. D.

To keep a bruise from turning black, cover thickly with a paste of starch and water. Repeat when dry.—[P. J., Neb.

If a child with scarlet fever is well rubbed once or twice each day all over with oil, as long as the fever lasts, half the danger will be averted, and it will not be so contagious, as the patient will not scale.—[W. N., Tex.

To stop nose bleed, let the child snuff powdered alum up the nostrils. The same remedy will stop bleeding when a tooth has been pulled, if applied to the cavity.—[W. N., Tex.

It is sometimes dangerous to use a hot water bag for children. Here is a good substitute: Make a strong bag of linen or denim and fill with good, clean sand. Heat thoroughly in oven and then slip into another bag of flannel. This retains the heat a long time.—[E. E. K., Mass.

The American senna grows well in almost all sections of this country. It is very easily raised from the seeds, and ought to be cultivated in every garden. It is well known as a physic for children. Steep a handful of the dried leaves in 1 pt boiling water. Sweeten the resultant tea slightly and give as a dose 1 small cup or less every hour or two, until it operates.

An infusion of elder flowers is good for feverishness and sore mouth in children. Add 1 pt boiling water to 1 tablesp of the flowers. The inner bark of the elder mixed with cream, fresh butter, tallow or sweet oil, makes a nice cooling ointment for burns and other inflamed sores.

A tea of the leaves and bark of witch-hazel is useful to wash putrid sores. It is claimed that it will also help to remove the substance known as proudflesh. For this purpose a poultice should be made of a strong infusion.

Constipation Cures

This is excellent to relieve constipation: Wash and clean 8 oz each raisins, figs, dates and prunes, removing all the seeds and hard portions of fruit. Chop fine and wrap 1 tablesp of the mixture in pieces of waxed paper and put in a glass jar to keep fresh. Take 1 or 2 as a dose before retiring.—[C. L. A., O.

Another cure for constipation is made as follows: Steep 2 tablesp senna leaves in 1 pt boiling water slowly about 2 hours, then strain and put in a stewpan with 1 lb washed prunes. Cover and simmer until the prunes have absorbed all the senna water, then put in a glass jar and keep in a cool place. Take 1 or 2 tablesp before retiring.—[C. L. A., O.

Pain Killers

Put 1 tablesp cayenne pepper in a wide-mouthed bottle, add ½ pt pure alcohol and a small piece of camphor. Cork and let stand 12 or 14 days. This is an excellent internal and external remedy. One teaspoonful is a dose for internal use.

Hot Drops: To 1 qt pure alcohol or brandy add 3 oz best gum myrrh, pulverized and ¼ oz African cayenne. Bottle and cork securely. Dose: 1 teasp or less.

Add 2 handfuls of the root of the blackberry plant to 3 pts of milk and boil down to 1 qt. This is very useful in cases of diarrhea and dysentery. The dose is 1 cupful every 2 or 3 hours.

Homemade Court Plasters

Soak bruised isinglass in a little warm water for 24 hours, then evaporate water by gentle heat. Dissolve the remainder in a little pure alcohol and strain this through a piece of loose weave linen. It will be a stiff jelly when cool. Pin a piece of fine, white silk on a small wooden frame and apply the melted jelly thinly and evenly. When the first coat has dried apply a second coat, and when this has dried cover the surface with a coating of balsam of Peru.

This is a good substitute for court plaster: Take 1 doz pig's feet, well cleaned for cooking, and boil down to a jelly of about ½ pt or less. The fatty substance will rise to the surface and should be removed. While this jelly is still warm, spread with a brush on scraps of clean, white silk. This is equal to any of the commercial court plasters.

Sprains

As soon as possible, after sustaining a sprain, bandage the injured member with cotton wet in cold water. Use a narrow, long bandage, bind it closely and keep it wet. Rest and keep quiet.

This is a good lotion with which to bathe sprains: Into 1 pt rose water put ¼ pt cologne water and 1 oz sal ammoniac. Keep the injured parts wet with this.—[Mrs J. C., N Y.

Oil of sassafras will cure a sprain if bathed thoroughly and bound with a thick bandage of flannel.—[C. L. A., O.

To cure a sprain, take the white of 1 egg, 1 tablesp vinegar and 1 tablesp turpentine. Mix in a bottle, shake thoroughly and bathe the sprain as soon as possible.—[Mrs F. A., Ore.

Sunstroke, Lightning and Fainting

Individuals of intemperate habits are much more liable to sunstroke than those who live a temperate life. Constipation is also a condition which superinduces sunstroke. The symptoms are dizziness, followed by general prostration and vomiting. The treatment should be very prompt. Apply cold water or ice to the scalp at the base of the brain and at the same time give the patient a quick-acting purgative. Apply mustard poultices to the abdomen and soles of the feet. Keep up the cold applications to the head, pending the arrival of the doctor.

A stroke of lightning, even though it may not kill, will invariably seriously derange the nervous system. In such cases it is essential that the animal warmth be maintained, which in consequence of the shock is liable to become diminished. If the respiration is feeble, artificial respiration may be employed, just as in the case of drowning. A little stimulant may also be administered, and mustard poultices applied across the region of the stomach and heart and also to the spine.

Fainting or swooning usually arises from some nervous condition affecting the heart's action. The patient should be laid in a horizontal position, cold applied to the forehead, and fumes of ammonia to the nostrils. When the patient is able to swallow, a little brandy mixed with water should be administered. Loosen the garments and open the windows to admit plenty of fresh air. Apply hot bricks to the feet.

A hearty sneeze is said to have the effect of warding off a threatening fainting spell. A grain or two of pepper, snuff or tobacco introduced into the nose, or tickling the interior of the nose a little with a feather, will usually insure a sneeze. The sneezing stimulates the blood vessels of the brain. It is handy to know this, when smelling salts and other means are absent.—[F. E. F., O.

Miscellaneous Notes

Excessive perspiration of the hands may be checked by squeezing lemon juice on them after washing. A solution of 1 oz alum in 1 pt water is also recommended in stubborn cases. Washing in a solution of bicarbonate of soda and water

is another effective remedy. Dust with fuller's earth.—[F. T., N. D.

When very weary or weak from exhaustion, heat some milk to scalding point, then drink it as hot as possible. It refreshes almost instantly.—[B. E., Ore.

The white of an egg and the juice of one lemon, well beaten together and slightly sweetened, if taken just before starting for a car ride, will prevent car sickness.—[Mrs C. O. D., N. H.

In cases of erysipelas or blood poisoning, apply the following poultice: Cut fine 2 onions and cook till tender in 1 pt water. Thicken with wheat bran and add bicarbonate of soda the size of a bean. Change poultices as often as necessary, until inflammation is reduced.—[Mrs M. J. L., Mich.

This is an excellent laxative: Steep 1 oz senna leaves in 1 pt boiling water until strength is extracted. Place a layer of figs in an earthen dish and pour over them the strained senna tea. Place the dish in a moderate oven and allow to remain until the liquid has been absorbed by the fruit. Keep in a closed jar. Take one fig as a dose before retiring.—[R. M. F., Me.

If the condensed air on the cool window panes where a number of persons are assembled be collected and burned, a smell as of singed hair will show the presence of organic matter, and if it be allowed to remain on the windows a few days, it will be found to be alive with animaculæ. Moral—Air your rooms.

For Additional Memoranda

The Postscript

Writing for Publication

When writing for publication, observe the following rules:

1—Write plainly, with ink, on one side of the paper only.

2—Don't crowd lines. Allow enough space between them for editing.

3—On the upper left-hand side of the first page write your full name and address plainly, and on the right-hand side note the number of words contained in the manuscript.

4—Inclose a stamped self-addressed envelope for the return of your manuscript in case it should prove unavailable.

5—Never send a separate letter to the editor referring to manuscript sent under another cover. No letter is needed unless in special cases, when it should be inclosed with the manuscript.

6—Never address an individual, but address the publication for which your manuscript is intended, and mark envelope MS in lower left-hand corner. There are many departments in a publishing house, and some concerns publish more than one magazine or paper.

7—Never, never, never roll your manuscript. Editors invariably drop rolled manuscripts in the wastebasket, unread.

8—Always date letters and sign your name and address in full in the plainest writing you are capable of. The Dead Letter Office at Washington is obliged to destroy millions of pieces of mail matter every year, which they are unable to deliver or return to senders.

How to Send Money

Clean, new one or two-cent stamps are usually accepted for the fraction of a dollar. Do not send personal checks to strangers. Send money order, or money in a registered letter, being careful to save the receipt until you are sure the remittance has been received.

Mailing Coin

Quite the quickest and easiest way to prepare a small coin to send in a letter is to tear off the corner of an old envelope, drop the coin into the little sack thus formed and pin to the letter across the opening. Dimes being so thin two can be sent without extra postage or danger of loss.

To Make Lead Pencil Writing Indelible

Lay it in a shallow dish and pour skimmed milk upon it. When the paper is wet all over, take it up, drain it off, and brush off with a feather the drops which collect on the lower edge. When it is dry the writing will be indelible.

To Take Out Writing

To remove ink writing from paper wash alternately with camel's hair pencils dipped in solutions of cyanide of potassium and oxalic acid. These are deadly poisons.

To Make Writing Look Old

Infuse 1 dram saffron into ½ pt ink and warm it over a gentle fire. When this ink is used the writing will turn yellow and have the appearance of very old writing.

Magic Copying Paper

To make black paper use lampblack mixed with cold lard; to make red paper use Venetian red mixed with lard; for blue paper, Prussian blue mixed with lard, and for green paper, chrome green mixed with lard. Mix to the consistency of a thick paste and apply to sheets of paper with a rag, then take a flannel rag and rub until all color ceases to come off. To write with this paper, lay down the paper upon which you wish to write, then place on the prepared copying paper, moist side down, and over this lay another sheet of paper. Write with a pointed, hard pencil, same as you would with a pen.

Colored Chalk or Crayons

The ingredients are ¾ lb blue clay, ¾ lb of the coloring requirement (such as vermilion, Prussian blue, chrome, etc), 2 oz turpentine, 4 oz spirits of wine (alcohol), and 6 oz fine shellac. Mix the glue with the water and pass through a fine sieve, and let settle. The water should then be poured off and the glue dried. The shellac must be dissolved in the mixed turpentine and alcohol with a little warmth. Blend the dry clay and coloring and then add the shellac mixture. Mix well so that the whole is like a well-incorporated doughy mass. It may then be rolled out into pencil form and dried with stove heat.

Homemade Barometers

Take a common wide-mouthed glass pickle bottle and fill it to within 3 inches of the top with water. Next take a common

Florence oil flask, remove the straw covering and cleanse the flask thoroughly. After this plunge the neck of the flask into the pickle bottle as far as it will go. In fine weather the water will rise in the neck of the flask, even higher than the mouth of the pickle bottle, and in wet, windy weather the water will fall to within an inch of the mouth of the flask. Before a heavy gale of wind the water will leave the flask altogether, about 6 or 8 hours before the gale comes to its hight.

Another very good homemade barometer is made by dissolving 2½ drams camphor in 11 fluid drams alcohol. In another bottle put 38 grains nitrate of potash (saltpeter) and a like quantity of muriate of ammonia (sal ammoniac) with 9 fluid drams of water. When all these ingredients are perfectly dissolved, mix the two solutions and shake them well together. Put this mixture into a glass bottle and cork loosely, or tie over the mouth of the bottle a piece of linen or cotton cloth. Place this bottle in a good light, but out of the sunshine, where it can be observed without handling. When the weather is fine and clear the fluid will be in a like condition, but on the least change the chemicals will rise and duly subside again. By watching these changes one soon becomes able to predict the probable changes a few hours in advance.

Minstrel Powder

To make blacking for the face to prepare for minstrel shows, proceed as follows: Cut corks in small pieces, dip each piece in alcohol, put them in an iron kettle, and touch a flaming taper to the pile. They will burn down to black ashes. Sift these ashes through a fine wire sieve and wet the dust with water, making it into a thick paste. It may be kept in a metal box until ready to use. When wanted for use, take a little of the paste in the palm of the hand, wet it a little, and then rub and apply as if washing the face. It will give a glossy black, which can, however, be readily removed with soap and water. By using stale beer instead of water, when mixing the paste, a higher gloss will be obtained.

To Make Modeling Clay

Knead dry clay with glycerin instead of water. This will make a mass that will continue moist and plastic for some time.

To Imitate Ground Glass

Dissolve Epsom salt in beer and apply this mixture to the glass with a brush. As it dries it will crystallize and present a nice imitation of fancy ground glass.

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